

**IDAHO TRANSPORTATION DEPARTMENT
REQUISITION K-000670
ROAD WEATHER INFORMATION SYSTEM BUILD-OUT PROJECT**

RFP ADDENDUM, BIDDER QUESTIONS AND ITD RESPONSE

To Interested Vendors: The following contains clarifications, changes, additions and responses to vendor questions and are hereby made a part of RFP K-000670.

1. The bid closing date has been changed to May 18, 2006
2. RFP Section 3.6 is changed with the following additions:

Payment for Project Management Plan

Payment will be made upon ITD approval of a valid invoice for project management planning after ITD approval of the Project Management Plan (PMP) submitted by the SI in accordance with Section 3.4 of this RFP.

Payment for Non-Recurring Data Integration

Payment will be made upon ITD approval of a valid invoice for Non-Recurring Data Integration after successful processing by RWIDS of the test files created by the SI's Data Integration System in accordance with Section 3.4 of this RFP.

3. RFP Section 6-Cost Proposal is changed to the following:

Cost Proposal (ME)

The cost proposal must be submitted in a separately sealed envelope clearly marked "CONFIDENTIAL COST PROPOSAL". The technical and cost proposals may be submitted in the same package.

The cost proposal must detail the following information:

Project Management Plan

Provide as a single line item, Project Management Planning for the project, which is to be equal to or less than five percent of the total installation cost as proposed in response to the New Site Installation Costs subsection.

Project Management Plan: \$_____

New Site Installation Costs

In a table, formatted as follows, provide new site installation costs, on a per site basis, for construction and installation of each site listed in Attachment A, constructed to meet the requirements of Section 4. Site installation costs must be displayed as a per site, fully burdened cost, representing all labor, overhead and profit. The per site costs must include, but are not limited to the following:

- Mobilization
- Traffic Control
- Grading & Site Preparation
- Utility Connections (Solar Array & Battery Installation, if required.)
- Foundation
- Fencing

- Tower or Pole
- Cabinet
- Sensors / Instruments
- Other Facilities

New Site Installation Cost Table

New Site Name	New Site Installation Cost
Seasons	\$
Five Mile Hill	\$
Dickensheet	\$
Harvard Hill	\$
Top of Whitebird Hill	\$
Deary	\$
Cottonwood Creek	\$
Concrete Section	\$
Saddle Camp	\$
Shoshone County Line	\$
Kamiah	\$
Elk City	\$
Top of Greer Grade	\$
Frei Hill	\$
Fort Hall Hill	\$
Horseshoe Bend Hill	\$
Midvale Hill	\$
Highland Valley Summit	\$
Hammett Hill	\$
Little Donner	\$
District 3 Boundary	\$
Top of Summit, ION	\$
Goose Creek Grade	\$
I-84/US-95 Interchange	\$
Juniper Interchange	\$
Heyburn Interchange	\$
Pine Turnoff	\$
Smiley Creek Airport	\$
Timmerman Hill	\$
Kinsey Butte	\$

New Site Name	New Site Installation Cost
Gwynn Ranch Hill	\$
Rogerson	\$
Conner Summit	\$
Idahome Interchange	\$
Pocatello (Monte Vista)**	\$
Malad Summit**	\$
Blackfoot Rest Area**	\$
Fish Creek Summit**	\$
Arbon Valley	\$
Tom Cat Summit	\$
Henry's Lake	\$
Botts	\$
China Point	\$
Gilmore Summit	\$
Willow Creek Summit	\$
Lone Pine	\$
Camp Creek	\$
Osgood/Payne	\$
Lost Trail Pass	\$
TOTAL NEW SITE INSTALLATION COSTS	

**Note that Pocatello (Monte Vista), Malad Summit, Blackfoot Rest Area and Fish Creek Summit are existing sites that are included in this list to be entirely re-built.

Data Integration Costs

Provide any non-recurring design and development costs associated with providing a non-proprietary network design capable of being operated independently from the SI.

Total Non-Recurring Data Integration Cost: \$ _____

Site Equipment Costs

Using the following example table as a template, provide pricing for each instrument / sensor to be installed at the site locations, including the field processing systems. The costing should list the instruments / sensors separately. The price should reflect the installed price, including mounting at the RWIS site, equipment hook-up, calibration and testing.

Example Table

Equipment Description	Contract Years 1-3	Optional Years 4-5	Optional Years 6-7
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
TOTAL SITE EQUIPMENT COSTS	\$	\$	\$

Maintenance and Operation Costs

Provide a quote for all maintenance and operation (M&O) activities necessary to meet all requirements detailed in section 4.14. Costs should be provided on an annual, per site basis, billed monthly, throughout the project. Maintenance and operations costs should also be estimated for optional project years 4 through 7.

M&O Costs / Site Contract Years 1-3: \$_____ (ME)

M&O Costs / Site Contract Years 4-5: \$_____

M&O Costs / Site Contract Years 6-7: \$_____

Bidder Questions are in Bold:

1. **Will ITD consider offering a time extension for the proposal submittal due date?**
 - a. **Our justification is that this is a large undertaking that in affect will require us to perform some preliminary designs (i.e., this is almost a design – build project), and we believe it is important that we obtain more detail on each of the 49 RWIS site locations to ensure we can offer the most cost efficient solution. The May 11 deadline is not sufficient for bidders to perform such a large undertaking, and we would appreciate a 30 day or more time extension if possible to allow us to complete our field review.**
 - b. **A second factor to consider is that the proposal due date occurs in the same week as the ITS America conference in Philadelphia (May 7 – 9), and we would expect all of the key RWIS vendors along with ourselves to be in attendance at this national conference. The timing of these two events further exacerbates our ability to provide / negotiate competitive pricings.**

Please see change #1 to RFP specifications.

2. **Does the Department have a statewide radio network (i.e., 700 or 800 MHz radio) that could be used to transmit video and data from each of the 49 new RWIS locations?**

The state microwave system is available to meet communication requirements, however it would be the vendor's responsibility to coordinate this. See attached map. Contacts: Mr. John Parker, Department of Administration, 208.288.4007, email: john.parker@adm.idaho.gov

3. **Is the “ITD RWIS Build Out Site Assessment Report” considered to be gospel with respect to site requirements? For example, in the ITD RWIS Build Out, the Dickensheet site requires a multiple sub-grade temperature probe, but in the RFP document RFP**

Attachment A only a sub-surface temperature is mentioned (single temperature). In the Build Out report for the Whitebird site, 2 remote puck only sites are called for but in the RFP Attachment A, only a surface sensor is required. At the Osgood Payne site the Build Out report requires the cameras to be remoted from the RWIS tower and mounted to an Osgood Payne structure over Interstate I-15. And so on and so forth.

Rely on RFP Attachment A for specific site sensor requirements. Rely on the Site Assessment Report for site variable such as location of the site, distance to power, special considerations for cameras and other "remote" sensors. (Sensors which may be positioned away from the main RWIS site.)

The Site Assessment Report discusses sensors that we subsequently determined weren't needed.

- 4. In the Attachment A table, it appears there is only one pavement sensor at most sites. But in the Assessment Report, many sites are described as having multiple pavement sensors, some at remote locations. Which document should we use to determine the number of pavement sensors? This is critical in the site survey process.**

For estimating purposes, a rule of thumb would be: 1 pavement sensor for a two lane roadway and 2 pavement sensors for a divided four lane roadway.

- 5. Couldn't we just use the Site Assessment Report to determine the number, locations and types of pavement sensors? This of course needs to be the across the board rule for all bidders.**

See response to questions 3 and 4.

- 6. Section 1.8 requires that the bidder (System Integrator) have a Public Works license. Assuming that the System Integrator has a licensed Electrical Subcontractor to perform the electrical work, what type of license should the System Integrator have? Is an Engineering License (Public Works Code 011070) suitable, or would another type of license be required?**

The prime contractor must have a public works license of the class appropriate to the value of the work. All subcontractors must be licensed as public works contractors appropriate to the type of work they will be doing on this project.

- 7. What is the Department's time line for evaluation, award and contract execution?**

Award is scheduled for the first part of June.

- 8. In Section 3.4 it states that "Within 90 days of contract award, the SI will submit a plan for integration of the existing RWIS sites, into the new RWIS network, managed by the SI." While the cost to do this integration is not part of this proposal can the Department provide detailed information at this time so that bidders can better understand the existing network and develop their architecture to accommodate these sites in the future?**

Existing site locations can be found on the ITD RWIDS site, located at: http://www.itd.idaho.gov/Apps/RWIDS_Public/ These sites report through the ITD RWIDS system. Details regarding each site configuration will be provided to the winning SI,

subsequent to award.

9. **As noted in the RFP the construction of an RWIS site will require site clearing and concrete work. Pending the response to question 8 does the department feel that there will be adequate time in the 2006 construction season for 24 RWIS sites to be constructed?**

The vendor should make an assessment of schedule requirements and respond as the vendor deems fit.

10. **Section 3.6 states that payments for the site installation will be made upon construction, installation and commissioning of a site. On page 44 of the RFP the Department asks for an estimate of the Non-recurring Data Integration Costs. How will these costs be invoiced and paid? In addition, given the stated requirements for multiple deliverables due shortly after contract signature, can the pricing schedules be modified to add a line for mobilization payments and/or project management costs?**

See changes #2 and #3 to RFP specifications.

11. **Please clarify the payments for maintenance. As we read the RFP the bidder will provide an annual cost per site for the operation of an RWIS site. This annual cost will be divided into 12 equal payment installments. When do the payments for maintenance and operations of a site commence; upon commissioning? Thus for the first two years, until all sites are online, the amount of sites being operated and maintained will be changing as new sites come on line.**

Maintenance and operation costs should be quoted on a monthly, per site basis. Sites will become part of the M&O program after the site meets commissioning requirements noted in Section 4.9, at which time the vendor will be able to begin monthly invoicing. Monthly M&O costs should be prorated in the case of a site being commissioned during the month.

12. **In the vendor response criteria for Section 4.2 and 4.4 it states "Place specification sheets for all proposed sensors into a separate Specifications binder." Are these specification sheets to be provided as part of the bidder's proposal? If part of the proposal, do they count towards the 100 page limit for the technical proposal?**

The specifications will not count toward the proposal limit of 100 pages. Six copies of the specifications binder are required.

13. **In Section 4.4; NTCIP Compliance it states that all signal processing, measurement analysis, video capture --- shall be NTCIP compliant. NTCIP is a data transmission protocol that would be suitable for RWIS data or CCTV control data, but NTCIP does not address video capture, or the transmission of video images. Please clarify the requirements of this section.**

It is sufficient that the video capture system meet the requirements specified in RFP Attachment C – Camera Specification, and, RFP Attachment D – Data Integration Specification.

14. **In Section 4.4; Sampling Requirements it states that the transmission shall include all information collected since the last transmission. We interpret this requirement to mean that if a fifteen minute reporting period is used, that report would include all data**

sampled during the 15 minute period (e.g. 15 precipitation accumulation reading, which are sampled once per minute, or 180 pavement temperature reading which are sampled every 5 seconds), and not just the last sample for each of the parameters. If we are interpreting this requirement correctly it can have a significant impact on the message size and communications requirements. Please clarify that we are interpreting the requirement correctly.

The most recent sample, calculated, or average value, as applicable, should be sent, not all sample values generated during the reporting interval.

15. **Can the Department provide a list of utility company contacts for each of the Districts? This information would be helpful to allow bidders to contact the utility companies to discuss costs/schedules for utility connections.**

Please see Addendum Attachment A, which provides additional information as tabulated reference to electricity and telephone companies that are believed to be providing service in the vicinity of each of the forty-nine new RWIS sites. This information is incomplete and not guaranteed to be accurate, but rather, represents the best information currently available. Additional utility information may be available through the Idaho Public Utilities Commission. 208.334.0800. <http://www.puc.state.id.us/>

16. **In Section 4.7 it states that "The SI shall be required to fully integrate with current ITD systems that use the NTCIP protocols, such as the ITD Dynamic Message Sign Network. The SI will be provided with information necessary to ensure compliance and compatibility with the existing systems". More detail on this requirement is necessary for bidders to properly assess the requirements to develop their cost estimates. Specific items of concern include, but are not limited to:**

- **Will the RWIS system need to communicate with individual signs, or a central sign system?**

Yes, as a future deployment option for all ITD NTCIP compliant DMS systems.

- **What signs or sign control systems are currently used?**

ITD DMS that comply with the NTCIP standards noted in the following table.

- **Can a copy of the communications protocol be provided?**

ITD DMS that comply with the NTCIP standards noted in the following table.

- **Is it expected that the RWIS data will automatically generate sign messages?**

Yes, as a future deployment option for all ITD NTCIP compliant DMS systems.

NTCIP Standards Applicable to ITD DMS Deployments

Standard	Document Title	Description	Type	Development Status	Date
NTCIP	Object Definitions for	Defines DMS data for all types of signs that	Data Dictionary	Published. Amendment 1	08-04

Standard	Document Title	Description	Type	Development Status	Date
1203	Dynamic Message Signs	can change state		approved; Version 2 under development	
NTCIP 1201	Global Object Definitions	Defines data, such as time, to be used in multiple device types including DMS	Data Dictionary	Amendment 1 Published. Version 2 in ballot	08-04
NTCIP 1101	Simple Transportation Management Framework	Rules and protocols for organizing, describing and exchanging transportation management information between applications and equipment for interoperability	NTCIP Base Standard	Published. Amendment 1 Version 1 Approved	08-04

NTCIP 1102	Base Standard: Octet Encoding Rules (OER)	Encoding/decoding rules to prepare data for transmission or to decode data before sending it to an application	NTCIP Base Standard	Approved. Recommended Standard	08-02
NTCIP 1103	Simple Transportation Management Protocol (STMP)	Rules for exchanging data with little overhead for interoperability of transportation devices operating over limited bandwidth links.	NTCIP Base Standard	In user comment draft;	08-04
NTCIP 8004	Structure and Identification of Management Information (SMI)	Defines how the NTCIP effort defines and registers its data, including how the SNMP MIB information is mapped into the ITS Data	NTCIP Base Standard	In working group draft.	08-04
NTCIP 2301	Application Profile for Simple Transportation Management Framework (STMF)	Application, presentation, and session layer protocols to provide simple information management services	Communications Protocol Profile—Application Layer	Published. Version 2 under development	08-04

NTCIP 2201	Transportation Transport Profile	Defines a transport profile to transmit data when devices are directly connected to the central controller or computer and do not require network	Communications Protocol Profile— Transport Layer	Approved	08-04
NTCIP 2202	Internet (TCP/IP and UDP/IP) Transport Profile	Transport and network layer protocols to provide connectionless and connection-oriented transport services	Communications Protocol Profile— Transport Layer	Published	03-02
NTCIP 2101	Subnet Profile for Point to Multipoint Protocol using RS-232	Data link and physical layer protocols applicable to roadside devices	Communications Protocol Profile— Subnetwork Layer	Published	03-02
NTCIP 2103	Subnet Profile for Point to Point Protocol using RS-232	Rules for point-to-point protocol use over RS-232 related circuits for interoperability of devices linked by dial-up circuits	Communications Protocol Profile— Subnetwork Layer	Approved. Version 2 under development	08-04
NTCIP 2104	Subnetwork Profile for Ethernet	Provides interoperability for devices that communicate over local area network (LAN) interfaces.	Communications Protocol Profile— Subnetwork Layer	Approved	08-04

- 17. In Section 4.13 Maintenance of RWIS Facilities it states that this includes maintenance of all structures and access areas --. What type of maintenance is expected for the access areas? Is the SI responsible for snow clearing, or just making sure that site features such as fencing, gates, etc. are in good condition?**

The SI will be responsible for making sure that site features are functioning. The SI will be responsible for accessing the site, as needed, to fulfill maintenance responsibilities.

- 18. In section 4.13 it states that "Recurring site electricity and site communication connection costs, excluding long distance charges, will be the total responsibility of ITD." Please clarify what communications costs ITD will pay for? Is it limited to local telephone calls or does it include any communications service with the exception of a long distance telephone call? What about broadband services such as DSL, or cellular services?**

ITD will pay only standard telecom and utility monthly fees.

19. Please clarify the video image requirements, and video transmission requirements. In the ITD RWIS Video Imagery Equipment Specifications it states *"The camera shall provide for images with a resolution of minimum of 640 pixels by 480 pixels. The camera shall be able to capture images at a variable rate up to 15 frames per second."* However, in the ITD RWIDS Data Interface Requirements the image file standards call for *"The image file shall be jpg format, 640x480 pixels in size, compression level to result in approximately 30-50 KB file size (each). "* It is unclear as to whether the system needs to provide jpeg images or streaming video with a resolution of up to 15 fps. These are significantly different transmissions that will have a major impact on the communications network that needs to be deployed. Specific concerns include:

- What types of images need to be transmitted from the individual cameras?

Individual jpeg images, per RFP Attachment D – RWIDS Data Interface Requirements.

- Is it acceptable to provide a camera that is capable of providing up to 15 fps, but only do video captures as part of this project?

Yes.

- If jpeg images are acceptable how often should they be updated?

The images should be updated to coincide with the polling frequency.

20. RFP Attachment A identifies required images for some locations as "multiple directions". Please clarify if the intent is to install a single pan/tilt/zoom camera or would a fixed camera positioned to view all approaches be an acceptable alternative? Define "multiple".

It is up to the vendor to specify how they are going to meet the requirement for images from multiple, greater than two, directions.

21. Does the Department have a list of interested bidders for this project that can be made public?

There is a list of vendors the Department notified that the RFP had been released. This is available on request, however it is not known if these vendors will be submitting a bid.

22. Are the Standard Specifications for Highway Construction Edition of 2004 for the State of Idaho incorporated for this project in their entirety by reference or only the specific items that are called out in the RFP?

Included in its entirety, where applicable. Exceptions should be noted in response to Section 4.5.

23. The following questions relate to contract type and the process of the bid/proposals:

RFP States:

- Section 3.1 Purpose

The purpose of this RFP is to solicit sealed proposals to establish a contract.

- **Section 6.1 Proposal Submission**
Bid Opening. Sealed proposals will be opened publicly the day after the bid closing date at 10:30AM. Only the names of the bidders will be identified at the public bid opening.
- As referenced in Section 5.5 Bonding and Insurance and excerpted from Standard Specifications Section 103.04: The lowest qualified bidder shall furnish a performance bond and a payment bond...
- The pricing sheets on pages 42 through 45 do not have a total price in order for ITD to determine the lowest qualified bidder. There is no requirement for a total cost for the New Site Installations.
- **Section 6.6 Proposal Evaluation states:**
 An evaluation committee consisting of ITD staff members and other state agency personnel will review and evaluate qualifying proposals submitted in responses to this RFP. All proposals received will be reviewed by the evaluation committee to ensure that the vendors have met all administrative requirements of the RFP package. Failure to meet these requirements will be cause for rejection of proposal.
- **Section 6.7 Method of Award**
 Proposal ranking will be determined using a point award method. The bidder having the highest point score is the apparent successful bidder. Award will be made to the most responsible and responsive bidder having the lowest cost.

23-A. The terms "bid" "proposal" "bidder" are used interchangeably throughout this proposal. Please clarify whether this is considered a sealed bid or a negotiated procurement?

This is a sealed bid.

23-B What is the purpose of opening up the sealed proposals on the day after the closing date when the evaluation of proposals as contemplated in Section 6.6 will take more than 24 hours?

Bid closing is 5:00 P.M. which is close of business. In order for vendors to be present for the public bid opening, it must occur during business hours, so that would be the next morning.

23-C If this is considered a sealed bid, is there a requirement for a bid bond, which is not stipulated in the RFP but is contained on your website as follows: All bids will require a 5% bid bond to be included.

There is no requirement for a bid bond for this request for proposals.

23-D In the pricing tables there is not a place for the bidder to provide their total price. Is there a single price that the bidders will be evaluated on, or will the Department evaluate the individual components (examine installation costs versus maintenance costs). If the individual components are being evaluated separately has the Department established scoring criteria for each of the price components?

Please refer to change #3 to the RFP specifications.

- 23-E For the proposal evaluation how will the points for the cost proposal be assigned? Will a formula such as the low bidder receives the maximum points and all other bidders are scored proportionately be used (e.g. a bidder that is 10% higher than the low bidder receives a score of 2250), or does the Department have a criteria where the points are assigned based on cost, regardless of the value of the low bidder (e.g. a total cost of \$25,000,000 would receive a score of 100 for this criteria).**

As noted in change #3, there are five separate total cost items requested – Project Management Plan, New Site Installation Costs, Data Integration Costs, site Equipment Costs and Maintenance and Operation Costs. Each separate total cost item will be compared across all bidders. The lowest total cost bid for each item will be divided by the next lowest total cost then multiplied by the number of points assigned to that cost category. For example:

	Bidder A	Bidder B
Total Cost Bid for Installation	46,775.00	48,996.00

For Example: Bidder A will receive 500 points for being the lowest cost bid for that item.
Bidder B will receive points in accordance with the formula:
46,775 divided by 48,996 equals 0.95467 times 500 = 477.33

This calculation will be completed for each of the five items and then totaled for each bidder to determine the total costs points.

- 24. This question relates to 1.7 Disputes. Neither the RFP nor the Standard Terms and Conditions details the Disputes Resolution Procedure. Would the following be acceptable for inclusion into the resultant contract or does the State have other procedures available for review?**

"ITD and Contractor agree to first enter into negotiations to resolve any controversy, claim or dispute ("dispute") arising under or relating to this Agreement. The parties agree to negotiate in good faith to reach a mutually agreeable resolution of such dispute within a reasonable period of time. If good faith negotiations are unsuccessful, ITD and Contractor agree to resolve the dispute by arbitration in accordance with the JAMS Comprehensive Arbitration Rules and Procedures or JAMS Streamlined Arbitration Rules and Procedures then in effect. The arbitrator(s) shall be bound to follow the provisions of this Agreement in resolving the dispute, and may not award punitive damages. The decision of the arbitrator(s) shall be final and binding on the parties, and any award of the arbitrator(s) may be entered or enforced in any court of competent jurisdiction. "

No additions to the standard terms and conditions will be considered.

- 25. This question relates to 3.4 Deliverable Requirements. This section states:**
Any required materials/parts (MIP), which are not included as warranty replacements, will be paid separately and in addition to the annual bid price for services. MIP will be paid for, per pricing submitted in the cost proposal.

Is it the intention of the Site Equipment Cost table to show the costs of the individual components (materials and parts) for non-warranty replacement?

Yes. The list would be used to pay vendor for non-warranty replacements. Anything not on the list would not be reimbursed.

- 26. This question relates to 4.13 Maintenance and Operations Requirements: Liquidated Damages. Please clarify the need for daily liquidated damages in addition to Performance Percentage adjustments as contemplated in Section 4.10. This appears to be a double penalty forcing an artificial increase in price by proposers.**

The Performance Percentage addresses system reliability and stability on a day to day basis, while the liquidated damages address a lack of responsiveness by the vendor to failures requiring repairs and estimates.

- 27. This question relates to the last page of the RFP, The Signature Page. Contained therein is the follow statement:**

SUBMISSION OF A BID TO IDAHO TRANSPORTATION DEPARTMENT SHALL BE DEEMED AN OFFER TO SELL THE SPECIFIED PROPERTY AND/OR SERVICES AT THE PRICE SHOWN IN THE BID AND UNDER THE STATE OF IDAHO'S TERMS AND CONDITIONS, THAT CAN BE FOUND AT <http://adm.idaho.gov/purchasing>.

Please confirm that the applicable set of terms and conditions contemplated for inclusion in the contract will be the follow set Revised 11-14-2005.

View or download the State of Idaho Standard Contract Terms and Conditions that are part of every solicitation.

The version posted at the Department of Administration web site noted above, is included in this solicitation.

- 27-A Are the Terms and Conditions Stated in Section 1 of the RFP the only ones applying to this procurement?**

No, the State of Idaho Standard Contract Terms and Conditions as referenced in RFP Attachment F-Signature Page, will also apply.

- 28. Since the vast majority of the RWIS towers that ITD has employed only meet a maximum wind load of 84 mph, can the RFP specification be relaxed to meet this?**

Reference Section 4.2, Survivability, the Wind Speed specification is revised from 134 mph to 90 mph.

- 29. Will the SI be responsible for modifying the RWIDS Server software to accept data from the 59 new sites?**

No. The vendor will, however be required to develop any middleware needed to provide the RWIS data to RWIDS.

- 30. Do the 4 sites around Pocatello need new towers to be erected, as the RFP says "entirely rebuilt"?**

If the existing towers are acceptable to the vendor, they may be used.

- 31. Does the 48 hour response start after the ITD first line responder has attempted to fix the problem and has not succeeded.**

No. SI is responsible for fixing problems, or providing estimates for non-warranty repair. ITD will be providing periodic first line maintenance, per RFP Attachment E – First Line “Preventative” Maintenance.

- 32. On pages 16 and 39, the RFP states; “Place specification sheets for all proposed sensors into a separate specifications binder. Where should this binder be included and do the pages count towards the 100 page total?”**

See response to question 12.

- 33. Regarding page count and the restriction to 100 pages. Can you provide a more detailed explanation of what is included in the page count? For instance, are the tab dividers and front and back covers of the binder considered a page, do the pages included in any appendices count toward the 100 page limit, and are the pages required in the separate binder (specification sheet) included as part of the page count?**

Page limit applies to pages of text.

Do specs sheets and manuals form part of the 100 page Business/Technical proposal limit?

No. Specification sheets and manuals won’t be included in the 100 page limit.

- 34. Regarding the financial information, the RFP states that only one copy is necessary. Is there a specific location we should include this documentation or can we create an appendix with the documents? Also, do these pages count toward the 100 page limit?**

The financial information can be included as an appendix to the original proposal and will not be counted toward the 100 page limit.

- 35. Where in the response documentation shall the public works license, or license application be submitted as requested in section 1.8?**

On RFP Attachment F-Signature Page, there is a line for the Public Works Contractor’s License number, right under the Federal Tax ID number.

- 36. The RFP document only states that the system must provide data to the RWIDS system. Is the SI is responsible for providing a central server or user interface?**

The SI is responsible for polling all stations and providing data and images, per specification, to RWIDS.

- 37. What if any response is required in section 5.5 as it is listed under required response on page 38 of the RFP?**

Statement that the SI has read and understands the bond requirement detailed in Section 5.5.

- 38. On page 42-44 neither the New Site Installation Cost Table nor the Equipment table provides a line for a total of the table. Is a total of each table not desired?**

Refer to response on question #23-D.

- 39. Can we assume that the SEC 10K is not included in the page count as one year of the requested document is over 60 pages long?**

See response to question #34.

- 40. Could you list the 37 existing RWIS site locations and the name of the vendor that originally supplied them?**

See response to question 8.

- 41. On page 28, second paragraph, the RFP states that; "Recurring site electricity and site communications connection costs, excluding long distance charges, will be the total responsibility of ITD." Does this mean ITD will pay all utility (power and communications) connection and engineering costs on the initial installations?**

SI is responsible for establishing power and communications at the site.

- 42. Will the individual ITD Districts going to have any supervisory duties over the construction of the sites, or will this be handled by ITD headquarters contract manager?**

Coordination with the Districts will be and possibly some inspection duties by District personnel.

- 43. Will Federal prevailing wage laws apply?**

Yes.

- 43-A Please advise if the work of this project will be considered federally funded and subject to federal prevailing wages?**

This work is federally funded and is subject to prevailing wage rules.

- 44. Are Autocad backgrounds available for each site from ITD to make as-builts from?**

Some backgrounds may be available as MicroStation® Files.

- 45. Given the short construction season, when does ITD anticipate award of contract?**

See response to question 7.

- 46. Can ITD provide the width of ROW at all sites (i.e. distance from center line to ROW)?**

No. Site photos and hand sketches are available for most sites and are included as attachments to this document.

- 47. Could ITD clarify the numbers and types of all pavement sensors at each site?**

Reference RFP Attachment A and response to questions 3 and 4.

- 48. The Smiley Creek Airport Site in District 4 requires a density-altitude sensor as per the attachment 7.0. There is no provision within NTCIP for this object. If the site has a barometric pressure sensor along with relative humidity/air temperature, this can be calculated manually. Could you remove the requirement for this sensor from the RFP?**

This requirement can be met by providing a density-altitude value in the database through the use of an acceptable calculation.

- 48-A What are the specifications for density-altitude data for the Smiley Creek airport site? Is this also a requirement for Pine Turn –off?**

This is not a requirement for the Pine Turn-Off site.

- 49. Could ITD specify the number and types of pavement sensors at each site along with an exact location for each? The "ITD RWIS Build Out Site Assessment Report" is not clear on exact locations and appears to conflict with the RFP on exact numbers and types of in-pavement sensors.**

Reference RFP Attachment A and response to questions 3 and 4.

- 50. Has ITD staked or otherwise marked each New Site on the ground?**

Use MP and Lat / Long coordinates.

- 51. Has ITD got a communication infrastructure that the SI could use to access the sites (e.g. a State wide radio network)?**

See response to question 2.

- 52. If yes, please can ITD advise what communications infrastructure exists, provide coverage information and provide detail of a compatible communications device (eg radio modem), or advise how a SI can find this out.**

See response to question 2.

- 53. Would ITD entertain SI communication equipment in ITD offices to support communications over an ITD communications infrastructure, should one exist?**

No,

- 54. Does ITD require the installation of a fence at each site?**

Yes.

- 55. Does the SI need to pay ITD or anyone else for:**

- 1. Lane rental during the installation phase?**

No

- 2. The space where each station is located for the duration of the contract?**

No.

3. Lane rental during the contract for maintenance purposes (e.g. replacement of surface sensors)?

No.

56. If the SI proposes that a New Site should be mains powered is it ITD's intention that the SI is responsible for covering the costs of establishing the Demarcation Point (bringing power from a transformer, furnishing and installing utilities to the base of a disconnect at the bottom of a meter)?

Yes.

57. Is the SI responsible for the cost of taking power from the Demarcation point to the Road Weather Station?

Yes.

58. If the SI is responsible for the costs outlined in Q7 and Q8, should the SI include them in the New Site Installation Costs in Section 6.4 Proposed Format and Content?

This is dependent upon how the SI wishes to recover costs.

59. ".... the SI is encouraged to submit a proposal recommending an optimal power method alternative. This proposal shall include an analysis of relative costs for each feasible alternative..."

We appreciate that this analysis is to be included in the Vendor Response but please advise how ITD would like to see the costs for "each feasible alternative" reflected in the New Site Installation Costs.

SI should propose a solution that meets ITD requirements. Only a summary discussion of the analysis performed by the vendor is required.

60. If the SI proposes that a New Site should use a phone landline is it ITD's intention that the SI is responsible for covering the costs of establishing the Demarcation Point (bringing the line in, furnishing and installing the utility to a NID)?

Yes.

61. Is the SI responsible for the cost of taking phone line from the NID point to the Road Weather Station?

Yes.

62. If the SI is responsible for the costs outlined in Q11 and Q12, should the SI include them in the New Site Installation Costs in Section 6.4 Proposed Format and Content?

This depends upon how the SI wishes to recover costs.

63. 4.12 Training Requirements: We note there are six (6) Districts. We would like to make sure that there is a good balance between trainees and trainers. Please advise how many people are likely to need training in each District?

Ten people per district.

- 64. 4.13 Maintenance and Operations Requirements: “.....(Note: ITD will be responsible for First Line preventative maintenance items. See attachment E)....”**

- 65. Please clarify under what circumstances ITD will be responsible for First Line preventative maintenance. Is it the intention that ITD personnel will attend a site to carry out checks as identified in Attachment E in the first instance of a problem being identified (Emergency Response)?**

See response to question 31. ITD will not provide emergency response.

- 65-A If yes, how quickly would ITD personnel be able respond and visit a site?**

See response to question 65.

- 65-B If no, please describe ITD's intentions as far as ITD's First Line Preventative maintenance responsibilities and the SI's maintenance responsibilities relate (for Level 1 Response, Level 2 Response and Non First Line Maintenance).**

See response to question 65.

- 66. 5.14 Warranty requirement. We would welcome ITD's reconsideration of responsibility for site damage in the event of a direct lightning strike. Would ITD consider adding direct lightning strikes to the list of Replacement costs that will not be the responsibility of the SI?**

No.

- 67. 5.3 Financials. We understand that ITD is requesting one copy of financial information as part of the Business/Technical section. Our audited consolidated financial statement is a sizeable document. As only one copy of financial documents is required, how would ITD like to see it included in the Business Technical section? Should it be included as a separate document and not included in the page count?**

See response to Question #34.

- 68. 5.5 Bonding and Insurance. If awarded a contract, the SI must post a performance and payment bond in an amount equal to, or greater than, 85% of the total proposal cost. Reference ITD Standard Specifications, Sections 103.04 and 103.05. Does the performance and payment bond also apply to the operation and maintenance costs?**

Total estimated proposal cost.

- 69. 6.3 Response Format. "These instructions prescribe the format Manuals and other reference documentation may be bound separately...." Does ITD require six (6) copies of " Manuals and other reference documentation"?**

Only one complete set of manuals is required.

70. 6.4 Proposal Format and Content

"New Site Installation Costs. In a table, formatted as follows, provide new site installation costs, on a per site basis, for construction and installation of each site listed in Attachment A,"

Are we correct in understanding that the New Site Installation Costs Table should not include the cost of sensors/instruments, field processing equipment and their installation?

No. Installation costs should include all recommended sensors/instruments for the site, as well as construction / infrastructure costs. All cost to make the site fully operational.

70-A If Site Equipment Costs are not included would ITD consider adding a column to New Site Installation cost table, for Site Equipment cost (sensors/instruments and field processing equipment and their installation) to meet the Data Required specified for each sites (Attachment A)

See response to question 70.

The reason we are suggesting this is that it could be a real challenge for ITD to work out the full cost for each New Site. There are sensors that make measurements of multiple parameters. For example, the standard atmospheric requirement specifies the report of Y/N precipitation. Our standard precipitation sensor reports Y/N and Rate. So where Precipitation Rate is required we would propose the same unit. But if Precipitation Rate and Type were required we would propose a different unit.

71. "Site Equipment Costs. Using the following example table as a template, provide pricing for each instrument / sensor to be installed at the site locations, including the field processing systems. The costing should list the instruments / sensors separately. The price should reflect the installed price, including mounting at the RWIS site, equipment hook-up, calibration and testing."

Is the Site Equipment Costs table intended to be just a price list for parts (to include sensors/instruments and field processing equipment and their installation) or is it intended to be site specific (i.e. should the SI include in the proposal a separate Site Equipment Costs table for each Site)?

See response to question 25.

72. Please advise whether the cost of installing road sensors (traffic control, trench, ducting and saw cutting etc.) should be included in New Site Install costs or Site Equipment Costs.

This is dependent upon how the SI wishes to recover costs.

73. Can further questions be asked before submission date?

No.

74. To facilitate our design and the level of effort that will be required to prepare our cost

estimates, can ITD offer any additional site plan details that will help potential bidders to better understand the specific design criteria for each site. Our request is to help us to understand the construction and infrastructure demands / issues that exist at each of the 49 sites, such as:

- Availability of communication (CDMA, Radio, Land Line, etc.)
- Site access (proximity to road, snow depths, winter accessibility, etc.)
- Proximity to utilities (power / phone)
- Site conditions:
 - a. Number of lanes / traffic volumes to help assess MOT requirements
 - b. Terrain to assess level of effort require for site construction (i.e., is it currently located on flat terrain or will the SI need to plan for additional excavation and possible installation of retaining walls)

See response to question 46. ITD understands that all site conditions that may affect the cost of the installation may not be known at the time of proposal submission. However, interested vendors should perform due diligence to determine the general site conditions, power and communication availability and other issues that may affect site installation and M&O costs. For sites where some variables are unknown, the vendor should clearly state any assumptions used to determine the cost estimate. If assumptions are not clearly stated in the proposal, ITD will assume no liability for changes in costs which may be contemplated through the change order process.

- 75. How firm are the proposed site locations? In other words, if the issues identified in question # 75 have not already been addressed by ITD and are the responsibility of the System Integrator, will the SI have flexibility in proposing other locations, and if so to what extent (Le., what are the functional design requirements that we would need to follow in proposing a new location)?**

The proposed site locations are where ITD wants to have them. If during the course of this construction project there is a need to change a site location, this will be handled through the Change Order process.

- 76. How should the SI address right of way and easement agreements and cost, should they arise in our design to connect with a utility?**

See response to question 74.

- 77. For the new site Installation Costs please clarify what is to be included in that price table. Does it include ALL components that make up a site including physical infrastructure, RWIS equipment, design, installation, etc, or does it just include the installation costs for the site infrastructure (listed bullets)''**

See response to question 70.

- 78. 4.4 Local Alarms; Are there specific details on what types of alerts, watches and warnings the RWIS sites are to generate.**

Vendor should detail their system's capability.

79. **4.7 bottom of p.21 "...fully integrate with current ITD systems..." Please specify which component(s) of the RWIS this will apply to, the central server, the RWIS sites or both.**

Both.

80. **4.8 Does ITS expect the SI to implement any of the Traffic Management Data Dictionary Standards to create a C2C communications interface?**

It is the intent that vendor systems remain compliant with any applicable Traffic Management Data Dictionary Standards.

81. **4.8 Please clarify the requirement "All software developed...shall be property of ITD"**

All middleware developed to acquire, process and deliver RWIS data per RFP Attachment D – Data Integration Specification.

82. **What are the specifications for the snow depth data requirement?**

See Section 4.2, data specifications for precipitation.

83. **The second last paragraph on the ITD RWIS Video Imagery Equipment specification would indicate a separate connection is required for cameras. Other references in the spec would suggest images are to be acquired by NTCIP compliant RPU and forwarded over the same connection as other data. Please clarify.**

Camera images may be acquired through the same connection as the RWIS data.

84. **In section 4.2 the specified sampling period at the ESS varies from 2 seconds to 1 minute depending upon the parameter. The data transfer requirement from the ESS to the central server as stated in section 4.8 is once every 15 minutes or less with the implication that the desired transfer interval desired by ITD will be close to the 15 minute timeframe.**

See response to question 14.

85. **The NTCIP data exchange between the ESS and central collection server typically transfers the current observation during each poll, although it is possible to execute multiple transfers. Is there a specific reason for the sampling frequencies stated in the Data Specifications table on page 15? Is there a need to store these individual sampled values?**

See response to question 14.

86. **In section 4.4 under sampling intervals it states, "The transmissions shall include all information collected since the last transmission." Does this statement imply one NTCIP transmission of the latest set of all parameters collected in the collection interval or the transmission of multiple sets of discrete observations at different times?**

See response to question 14.

- 87. In some cases it is not entirely clear that data required as per the New Build Out Site List is fully consistent with Site Assessment Report recommendations. For example:**

District 1 – Rankings 1, 2; is a subsurface temperature reading required?

District 2 – Priority 4, 10; is the spec for precipitation rate/type or precipitation occurrence only?

District 3– Priority 6, 8, 9, 10; is the spec for precipitation rate/type or precipitation occurrence only?

District 4– Priority 5, 6, 7, 8, 9, and 10; is the spec for precipitation rate/type or precipitation occurrence only?

Reference RFP Attachment A – New Build-Out Site List

- 88. Are US 95 bridge deck sensors to be included with data collected by District 3 Priority Site 10?**

No.

- 89. Does replacement of existing equipment for District 5 Priority Rankings 1, 2, 3, 4 include only data measurements specified in the New Build Out Site List?**

Yes.

- 90. District 5 – Ranking 2; are two camera views required or only one?**

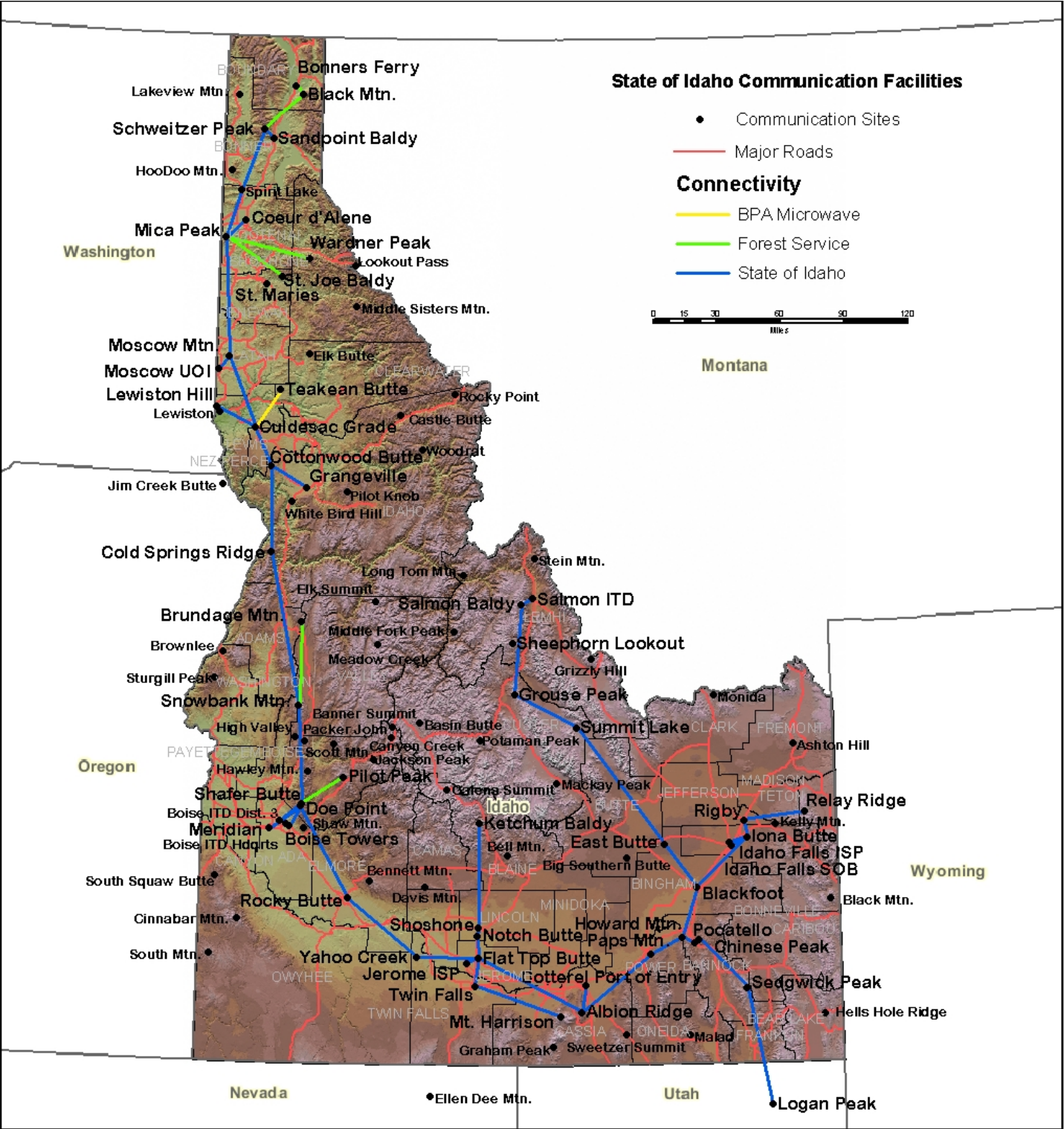
One direction.

Addendum Attachment A

District	Location	Highway	MP*	Power Company	Telephone Company
1	Seasons	SH-41	16.0	Avista	Verizon
	Five Mile Hill	US-95	526.0	Northern Lights	Verizon
	Dickensheet	SH-57	22.5	Northern Lights	Verizon
	Havard Hill	SH-6	23.2	Clearwater	Verizon
2	Top of Whitebird Hill	US-95	231.0	None	None
	Deary	SH-3	26.5	Avista	Verizon
	Cottonwood Creek	US-12	19.1	Avista	-
	Concrete Section	US-95	250.5	Avista	Qwest
	Saddle Camp	US-12	138.8	None	None
	Shoshone County Line	SH-3	51.0	Clearwater	Verizon
	Kamiah	US-12	64.7	Avista	Qwest
	Elk City	SH-14	49.5	Avista	Frontier
	Top of Greer Grade	SH-11	8.2	Clearwater or Avista	Verizon
	Frei Hill	US-95	259.2	Avista	Qwest
3	Fort Hall Hill	US-95	143.0	-	-
	Horseshoe Bend Hill	SH-55	57.0	None Apparent	None Apparent
	Midvale Hill	US-95	101.0	Idaho Power	Midvale Telephone
	Highland Valley Summit	SH-21	14.3	-	-
	Hammett Hill	I-84	102.9	None	Rural Telephone
	Little Donner	SH-55	120.3	Idaho Power	Frontier
	District 3 Boundary	US-95	171.2	-	-
	Top of Summit, ION	US-95	7.5	-	None
	Goose Creek Grade	SH-55	147.3	Idaho Power	Frontier
	I-84/US-95 Interchange	I-84	2.1	Idaho Power	Farmer's Mutual

District	Location	Highway	MP*	Power Company	Telephone Company
4	Juniper Interchange	I-84	263.0	None	None
	Heyburn Interchange	I-84	211.0	Raft River	Albion
	Pine Turnoff	US-20	127.0	None	Frontier
	Smiley Creek Airport	SH-75	165.0	Salmon River Electric	Midvale Telephone
	Timmerman Hill	SH-75	102.0	Idaho Power	Qwest
	Kinsey Butte	SH-75	85.0	Idaho Power	Qwest
	Gwynn Ranch Hill	SH-46	26.0	-	-
	Rogerson	US-93	17.0	Idaho Power	Filer Mutual
	Conner Summit	SH-77	11.5	Raft River	Albion
	Idahome Interchange	I-84	237.0	-	-
5	Pocatello (Monte Vista)	I-15	68.0	-	-
	Malad Summit	I-15	24.0	-	-
	Blackfoot Rest Area	I-15	101.0	-	-
	Fish Creek Summit	US-30	376.0	-	-
	Arbon Valley	I-86	50.5	Idaho Power	Qwest
6	Tom Cat Summit	US-20	223.7	Westbound	2006
	Henry's Lake	US-20	401.0	Fall River Electric	Fremont Telecom
	Botts	SH-33	120.3	Utah Power and Light	Teton
	China Point	I-15	178.5	Utah Power and Light	Mud Lake Telephone
	Gilmore Summit	SH-28	73.5	-	Century Telephone
	Willow Creek Summit	US-93	138.7	Lost River Electric	-
	Lone Pine	SH-28	49.2	Idaho Power	Century Telephone
	Camp Creek	I-15	185.3	-	None
	Osgood/Payne	I-15	123.7	Utah Power and Light	Qwest
	Lost Trail Pass	US-93	350.8	-	None

State Microwave System Map



District 1 RWIS Sites

Seasons Site Photos:



Looking North

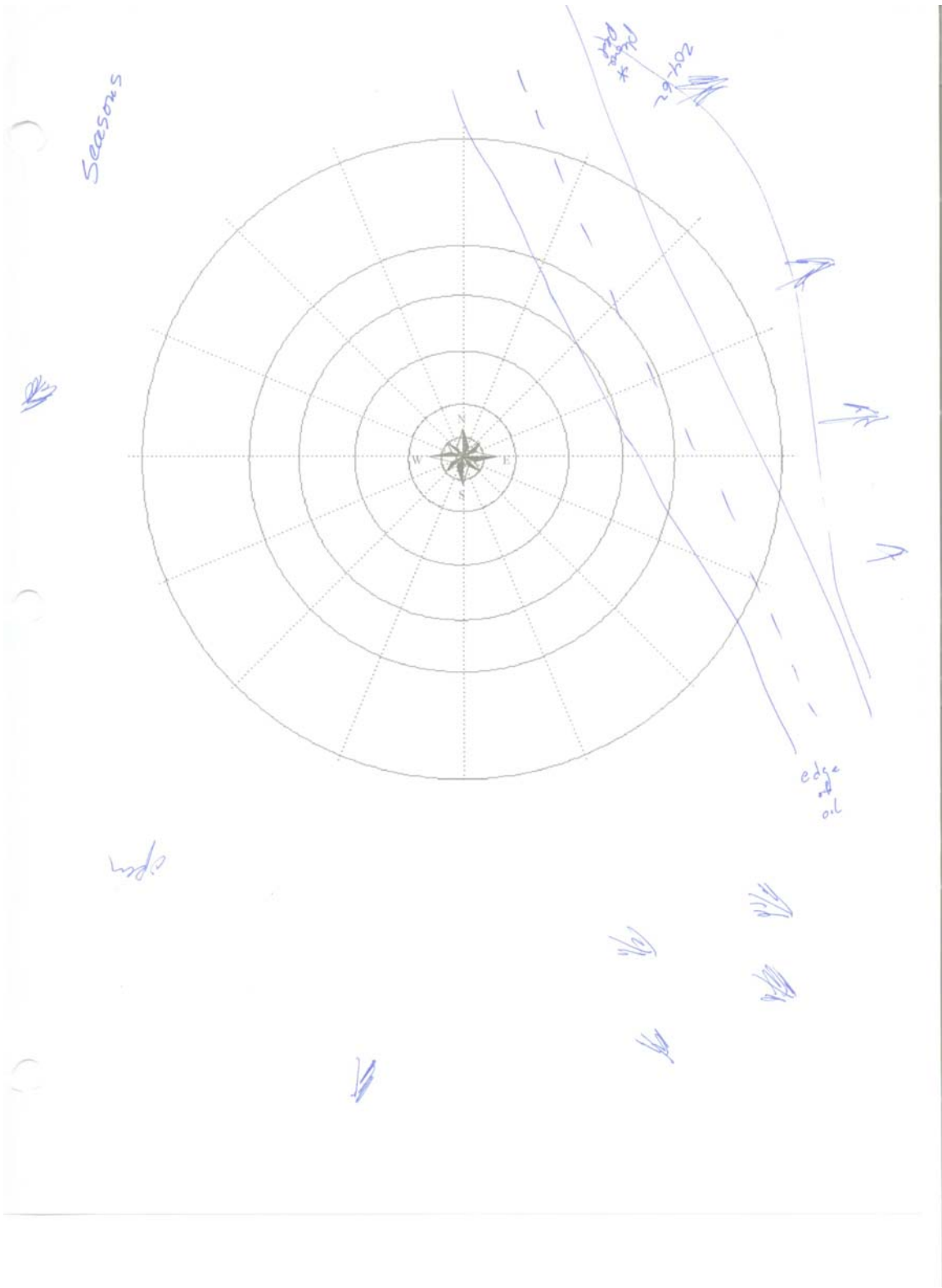


Looking South



Tower Area

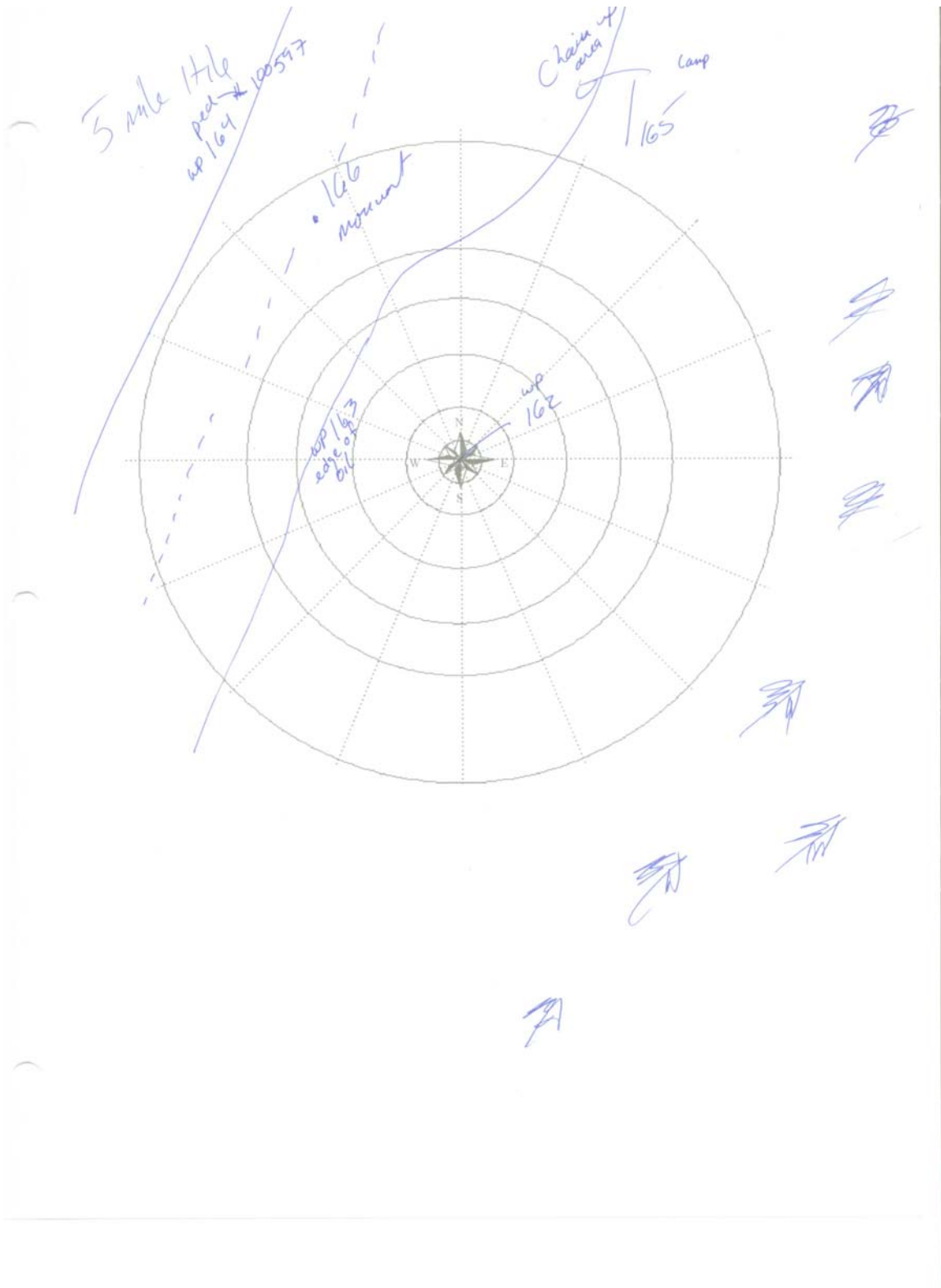




Seasons RWIS Site

5 Mile Hill Site Photos:



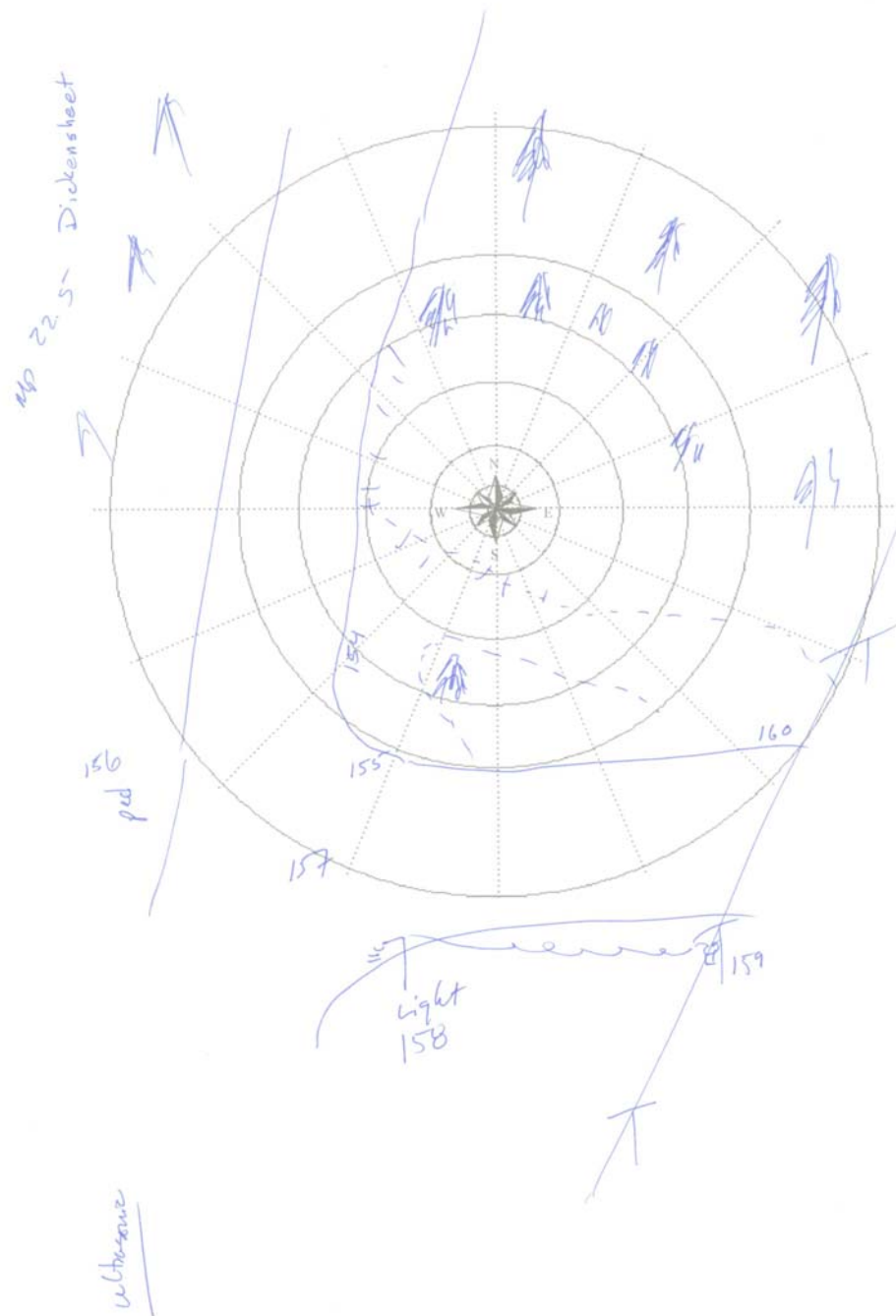


5 Mile RWIS Site

Dickensheet Site Photos:



Tower Site

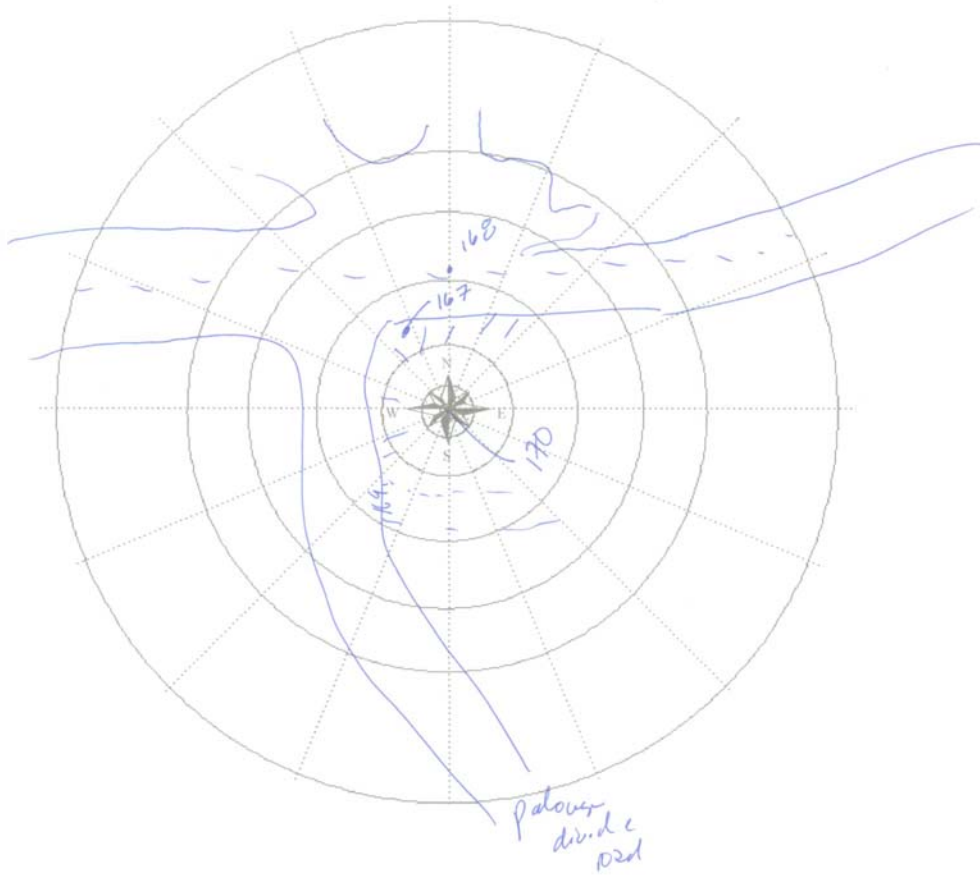


Harvard Hill Site Photos:



Harvard Hill

ped w/ 167
390 150



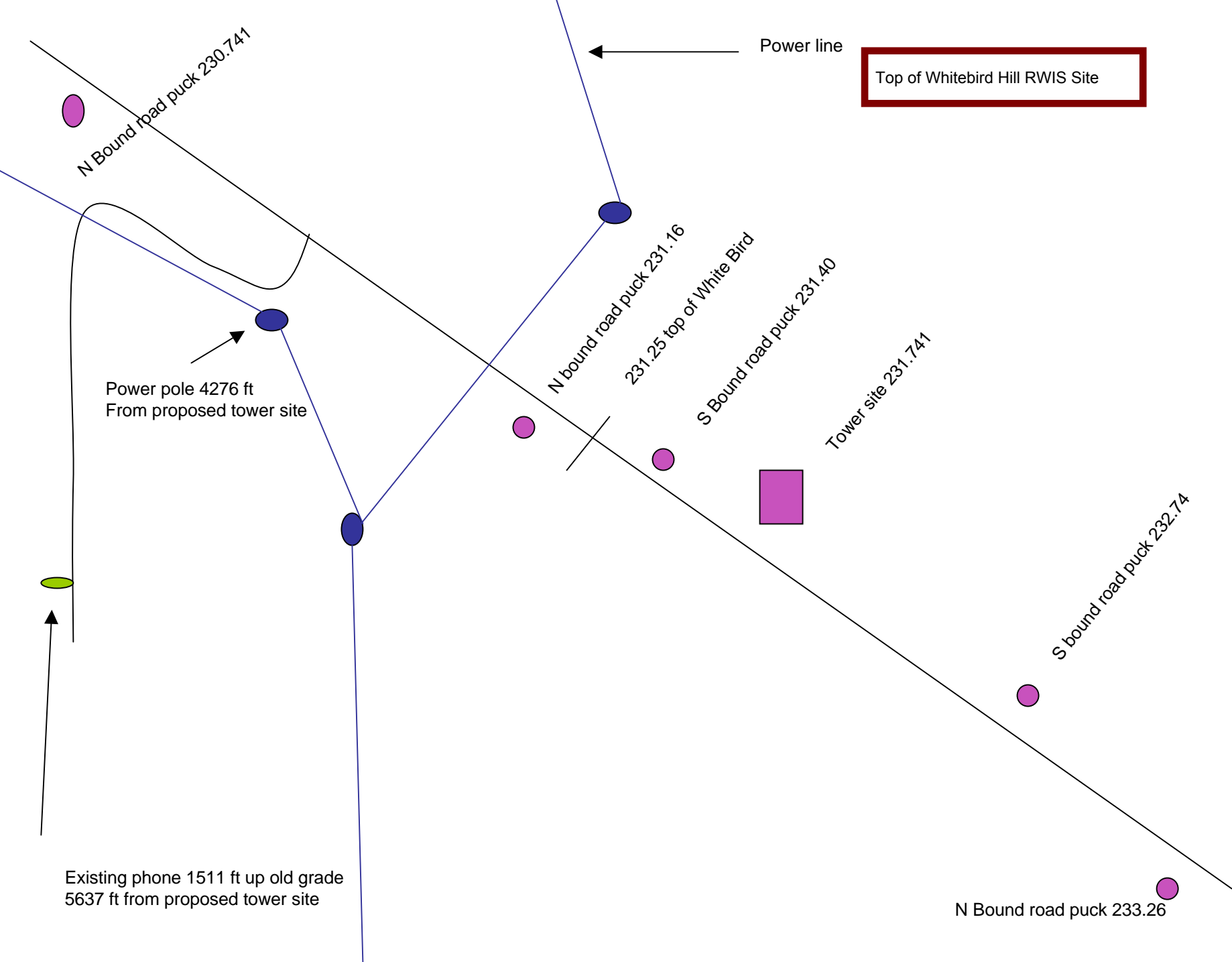
Harvard Hill RWIS Site


District 2 RWIS Sites

Top of Whitebird Hill RWIS Site

Site 2 Photos:







Top of Whitebird Hill RWIS Site

N Bound puck 233.26
8148 ft north of tower site
Problem corner for Ice

Top of Whitebird Hill RWIS Site

Power main line

Closest power pole





Power pole

Top of Whitebird Hill RWIS Site

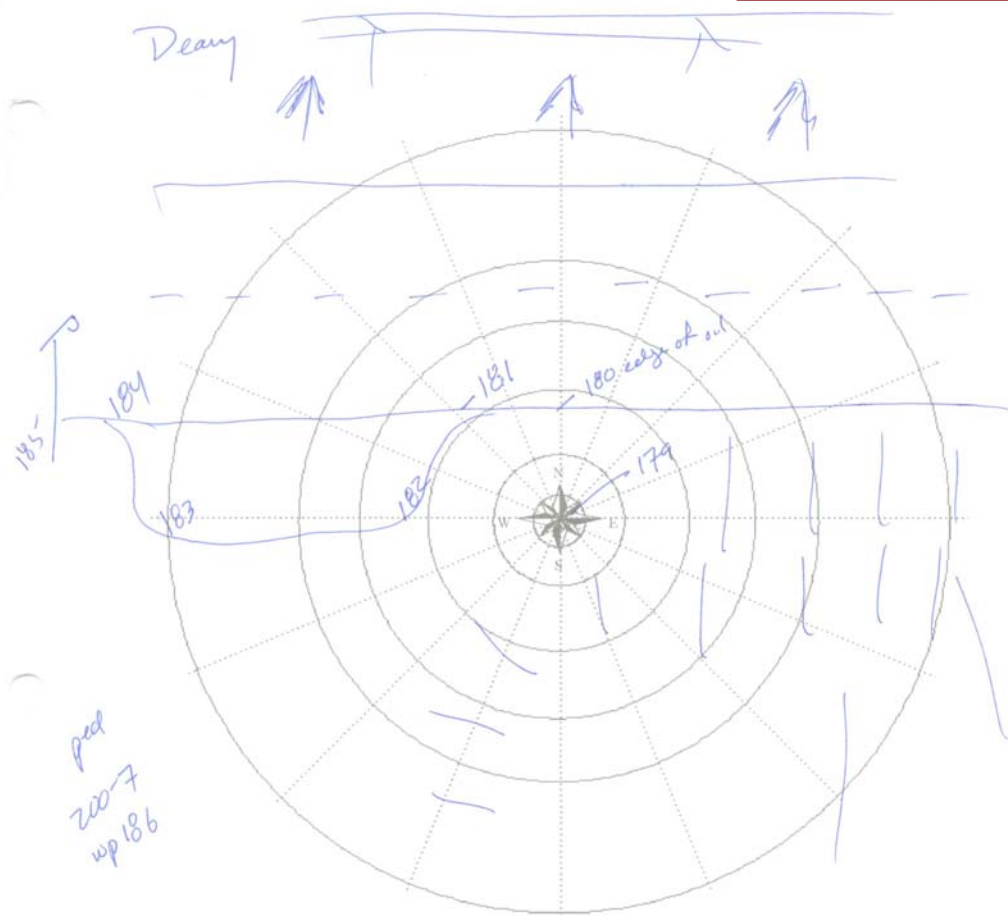


First phone location closest to project up the old highway 1500 ft.
US west

Top of Whitebird Hill RWIS Site

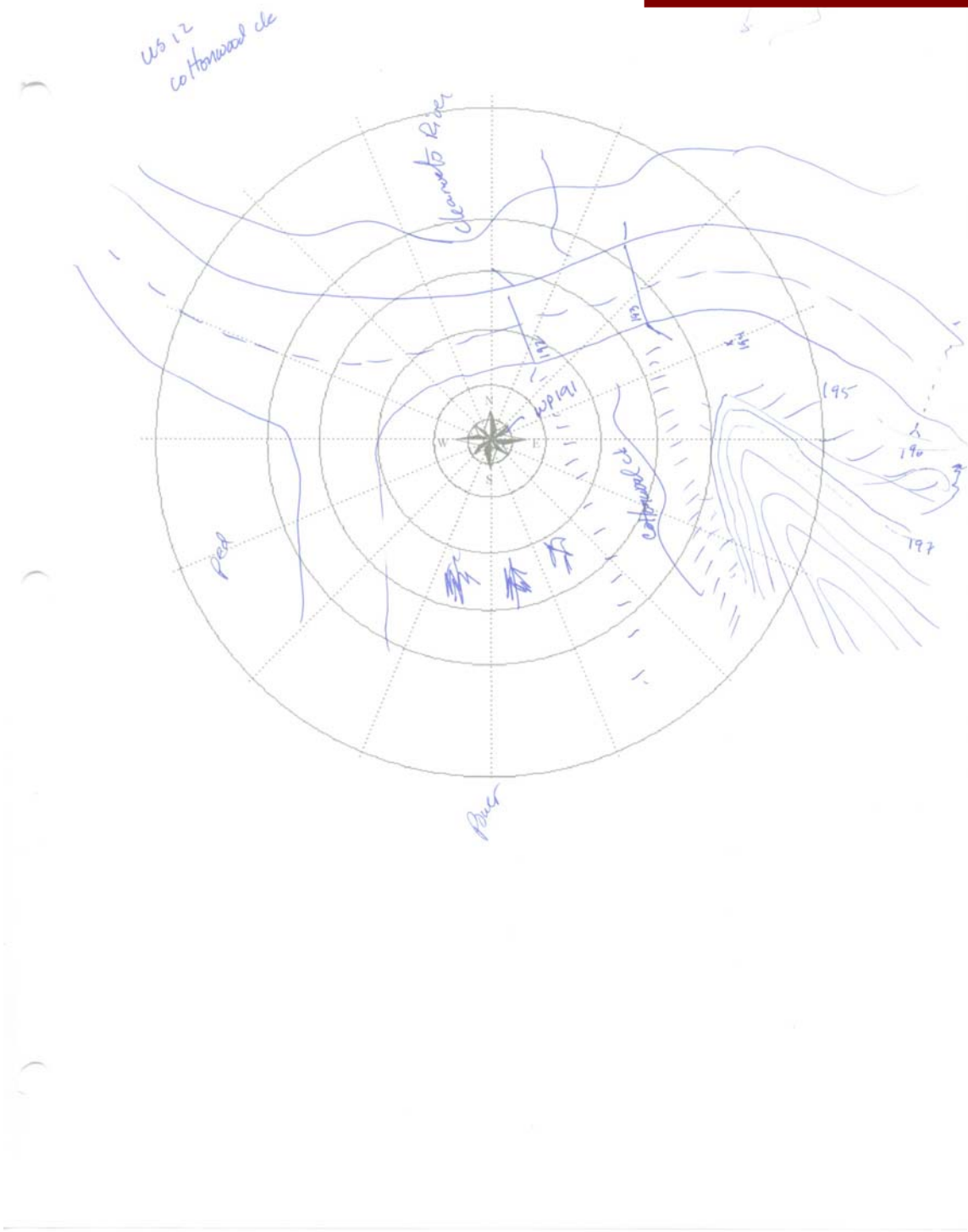
Deary Site Photos:





Cottonwood Creek Site Photos:

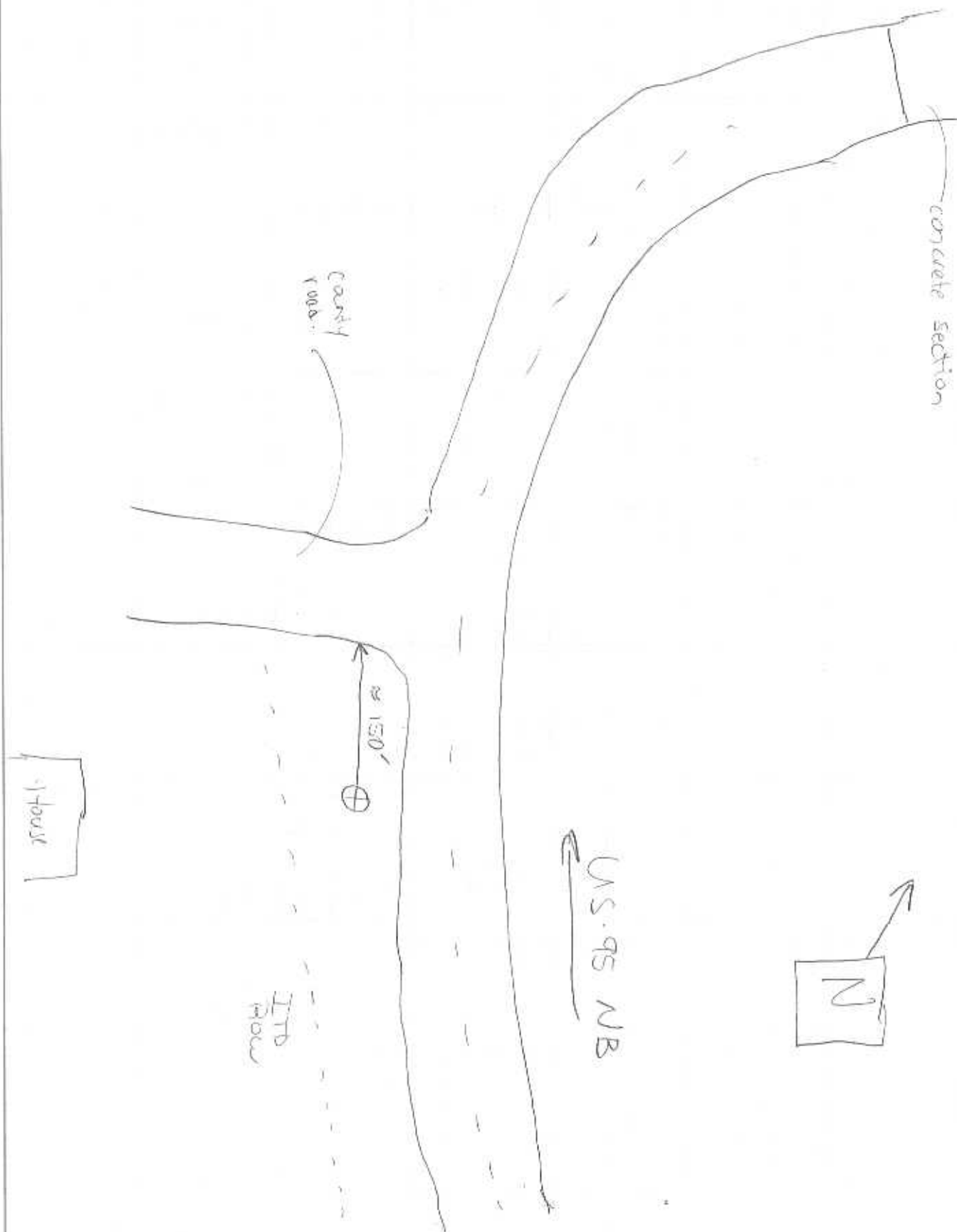




Concrete Section Site 2 Photos:



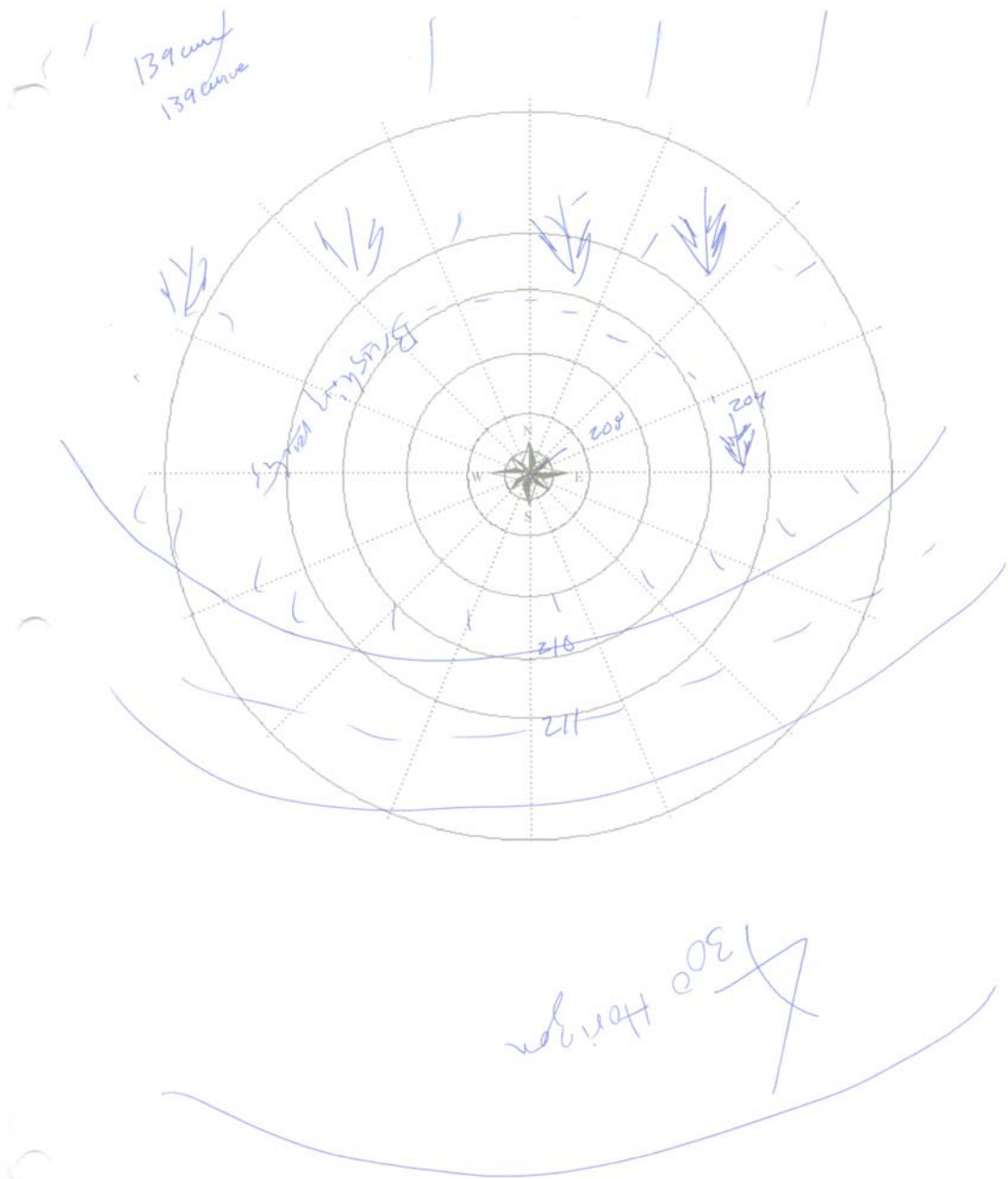
Concrete Section RWIS Site



Concrete Section Site

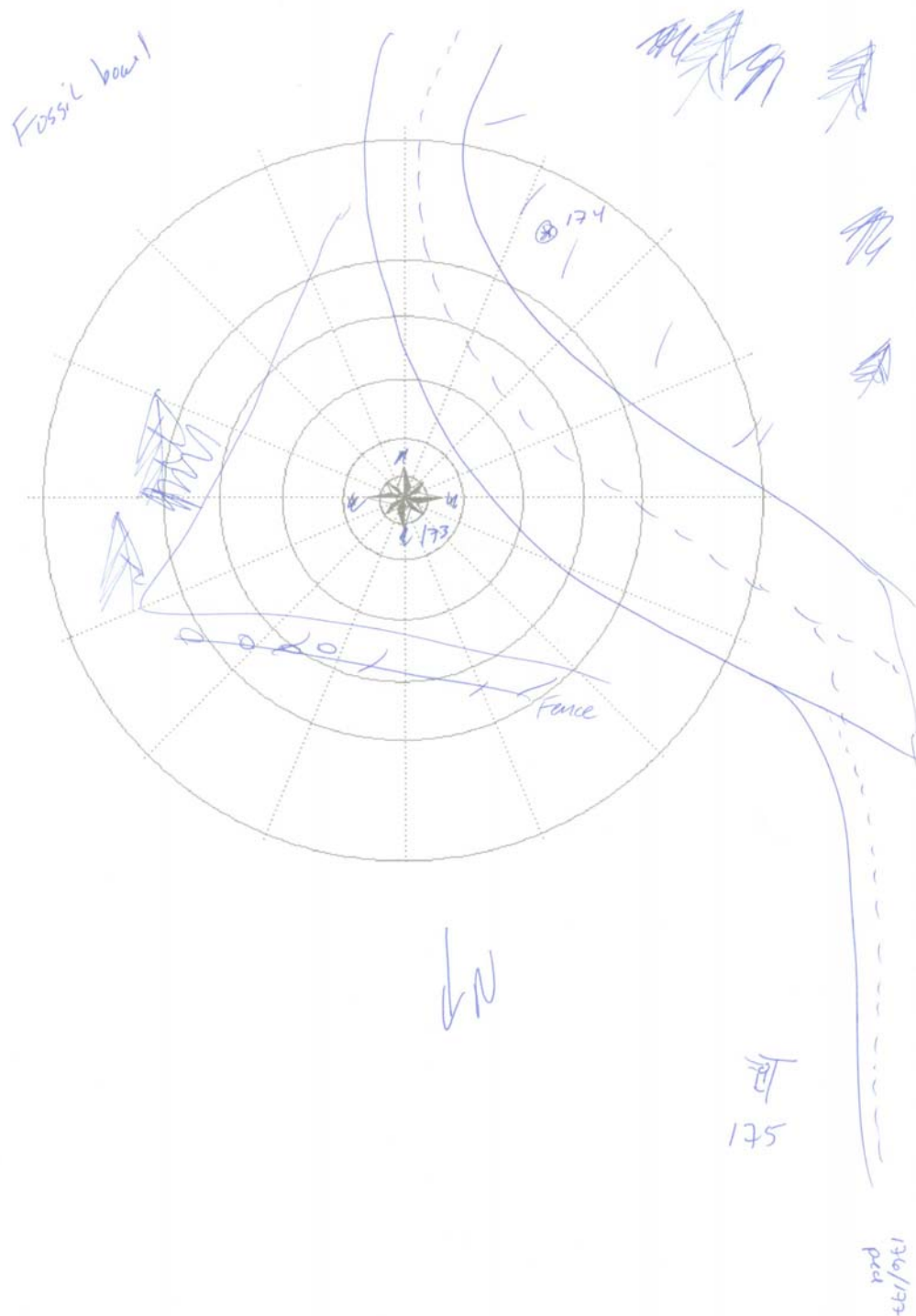
Saddle Camp Site Photos:





Shoshone Co. Line Site Photos:





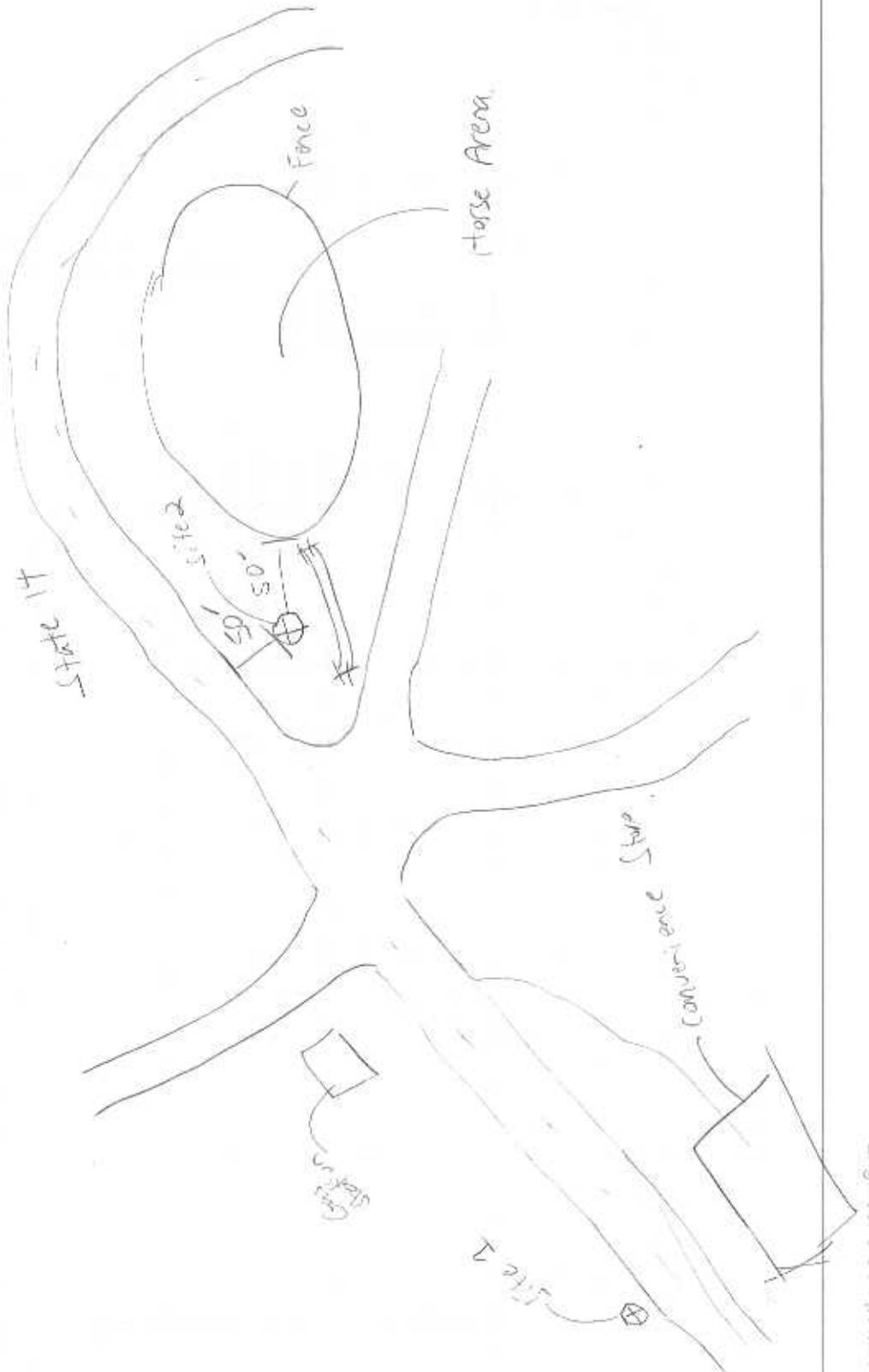
Kamiah Site Photos:



Elk City Site Photos:



Elk City



Top of Greer Grade Site Photos:



Top of Greer Grade RWIS Site

Top Gear Grade

Frei Hill Site Photos:



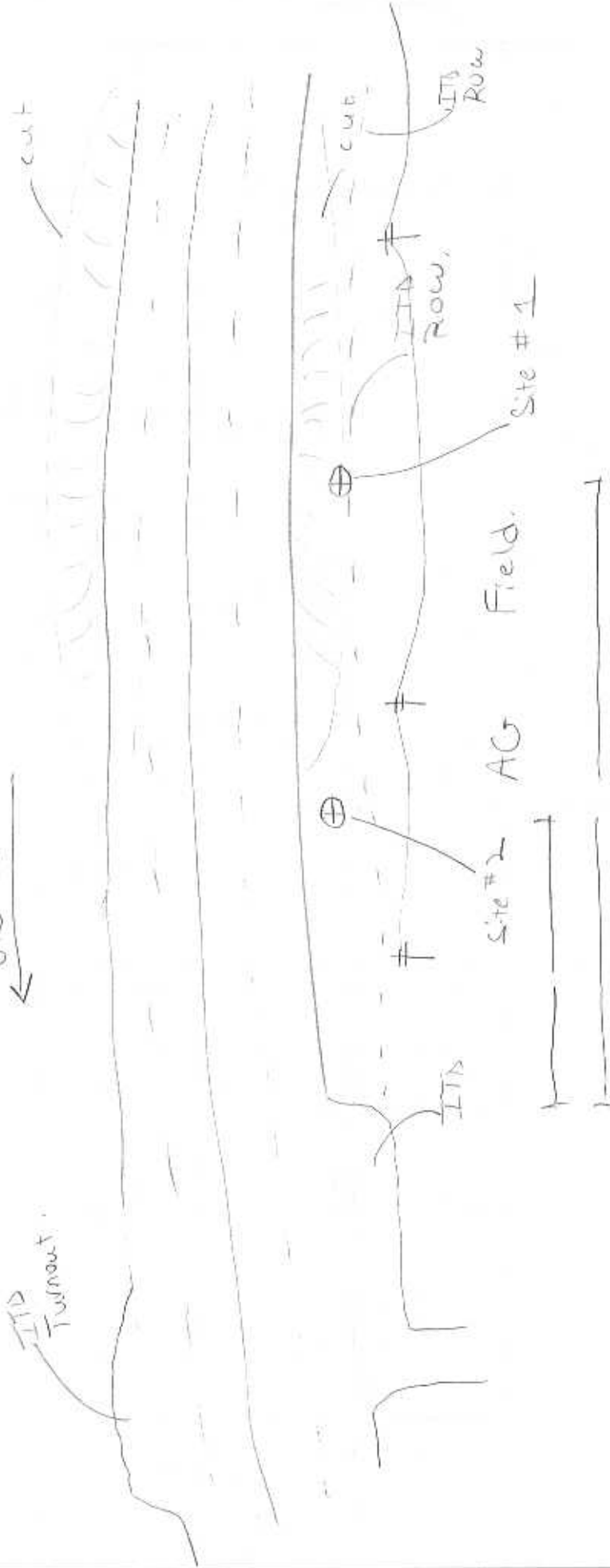
Frei Hill - Sites 1 & 2



AG Field.

US-95 N.B.

ITD Turnout.

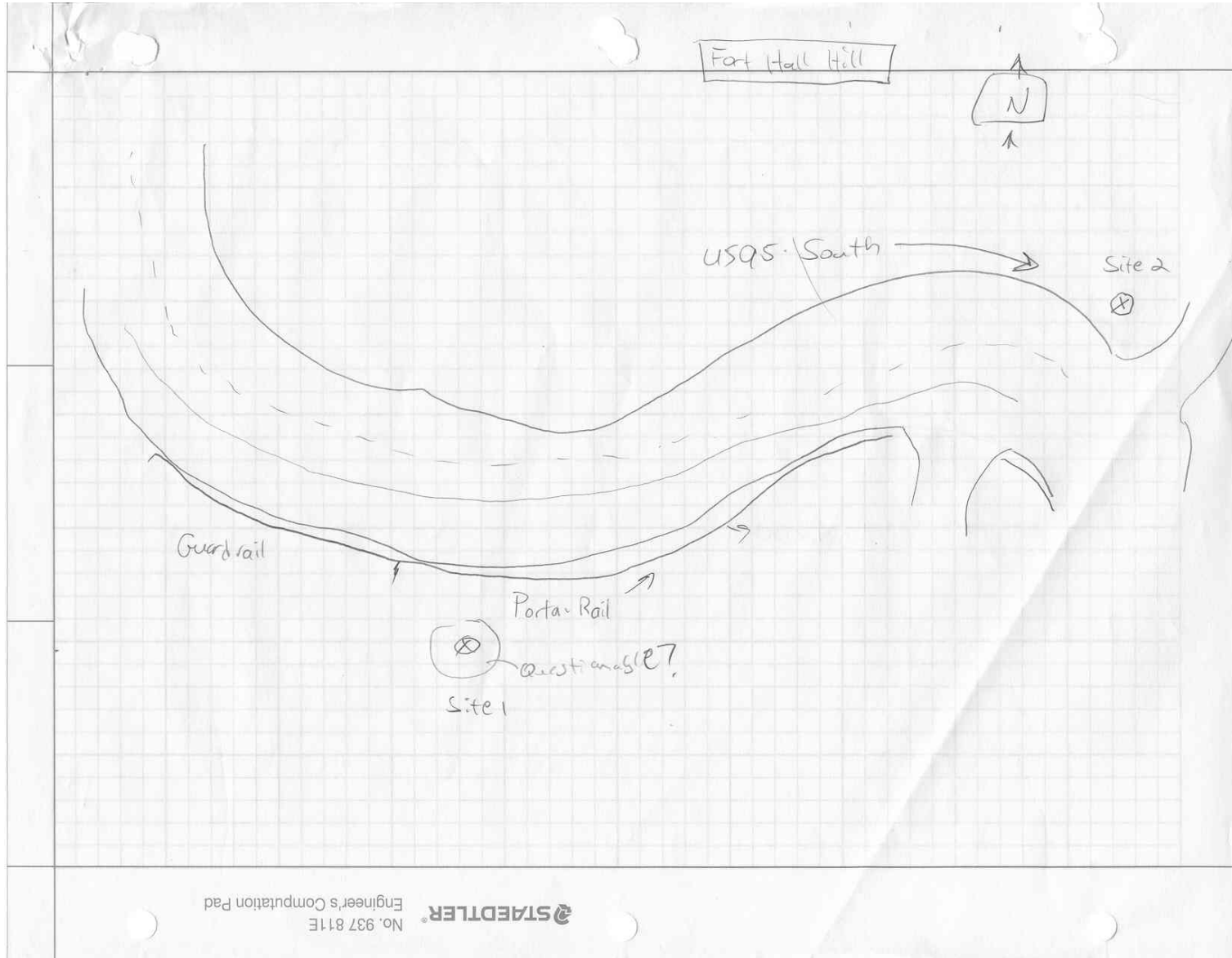


District 3 RWIS Sites

FORT HALL HILL Photos Site A 1-4



FORT HALL HILL Sketch

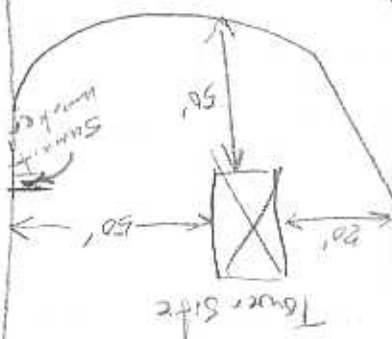


Horseshoe Bend Hill Site Photos 1-4



MP 57

Horseshoe Bend →



Row Fence - - -

Horseshoe Bend Hill



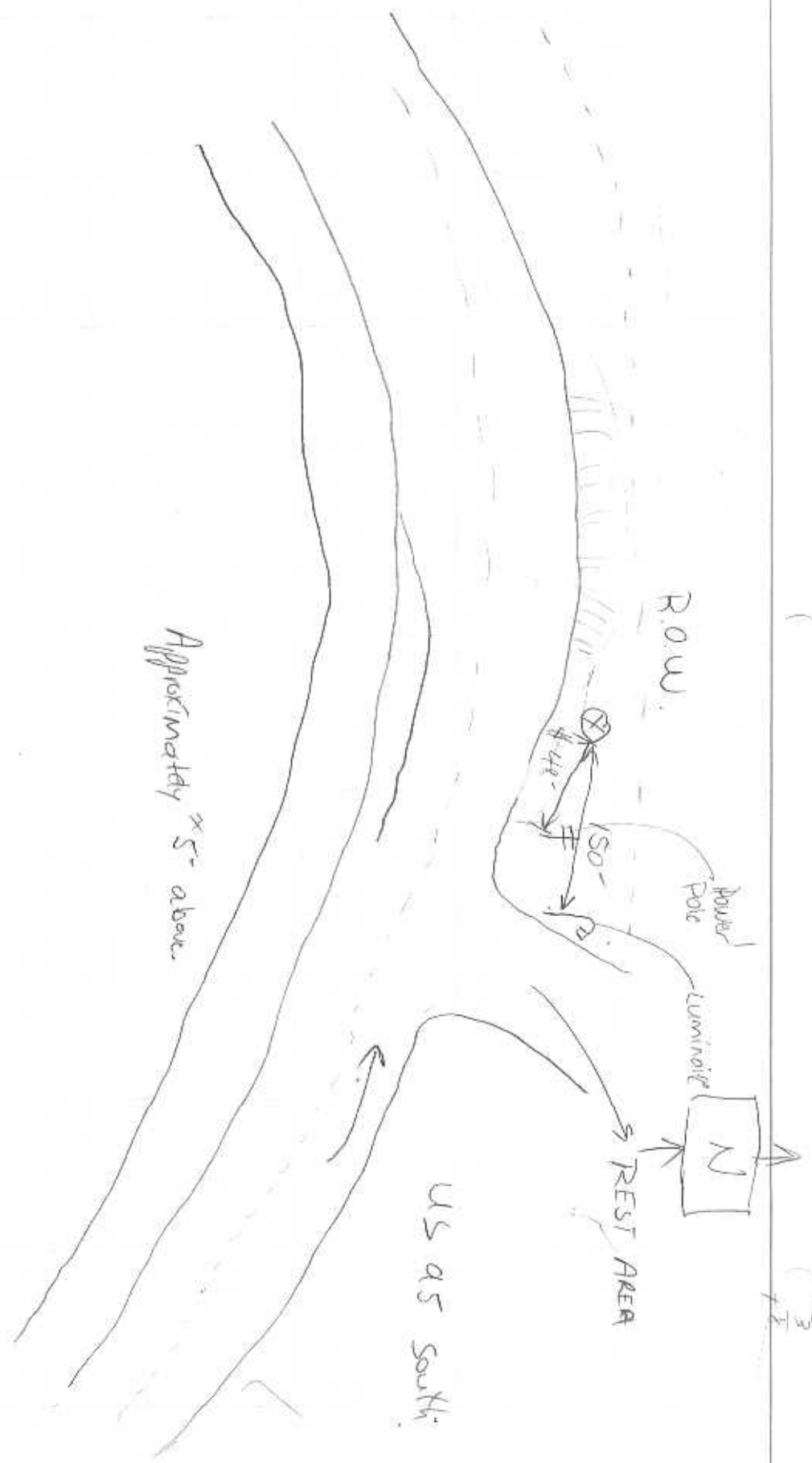
22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

MIDVALE HILL Photos 1-4



Midvale Hill RWIS Site

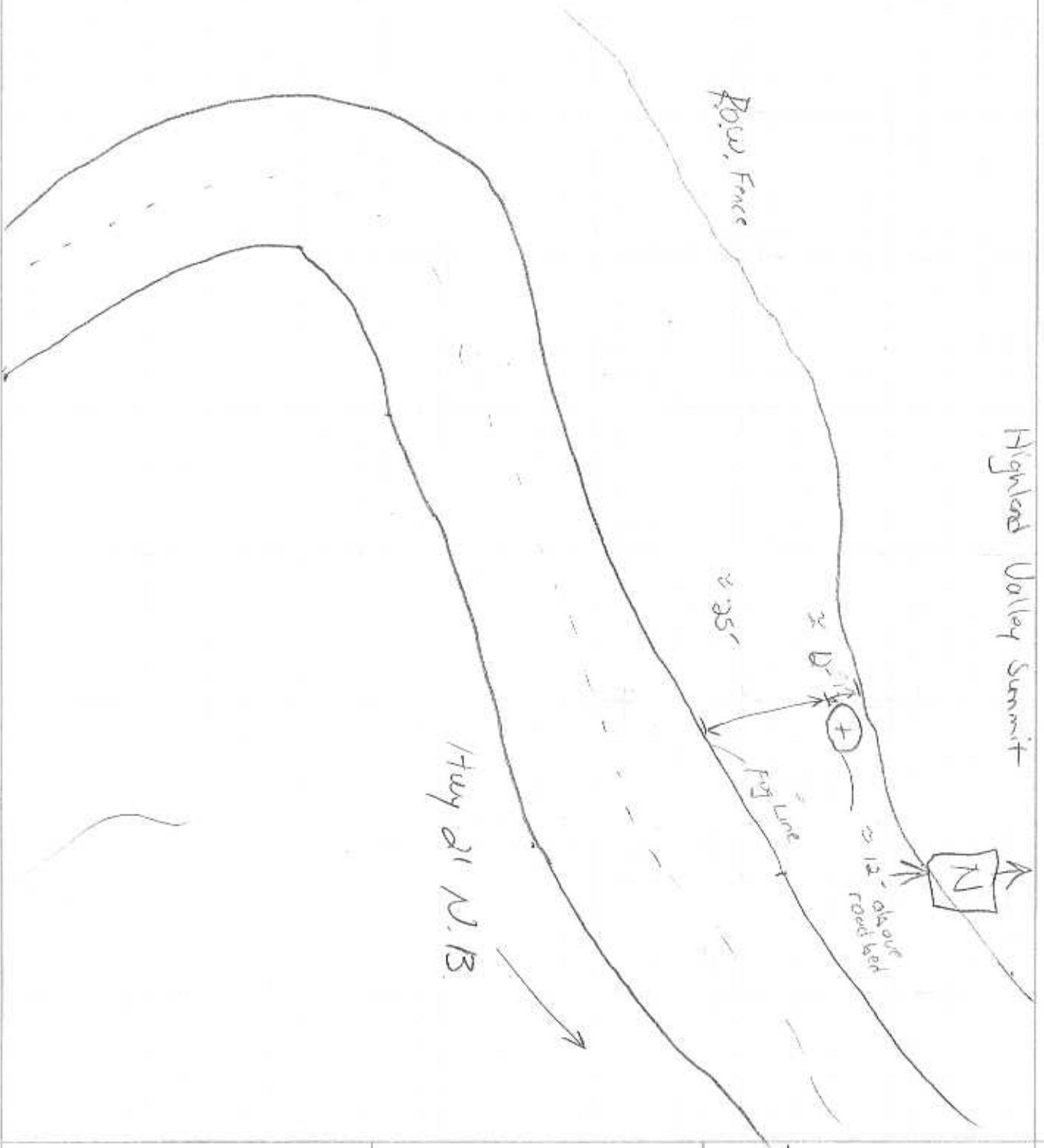
Midvale Hill



Highland Valley Summit Site Photos 1-3



Highland Valley Summit RWIS Site



22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

Hammett Hill Site 2 Photos 1-4



Hammett Hill RWIS Site

ITD Row.



100'

I-84 EB.

Hammett #2

Little Donner Site 1 Photos 1-4





Little Donner RWIS Site

ITD Row
X
Cathouse
SHSS South

Private
Drive

2

Donner #1

District 3 Boundary Site Photos 1-4



District 3 Boundary RWIS Site

District 3 Boundary



STEER CUT.

US 95 South →

ITD ROW

Power Pole

60'



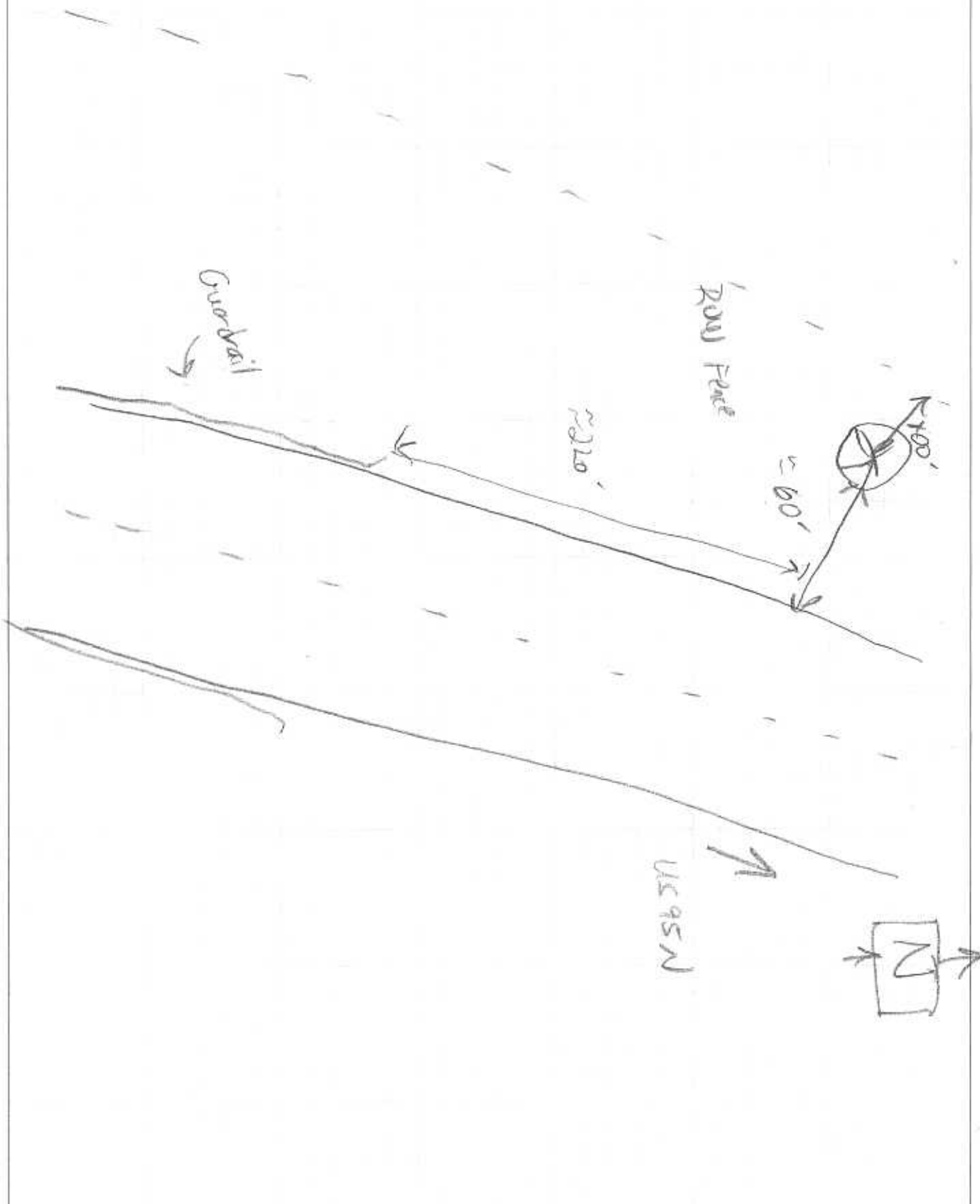
No. 937.811E
Engineer's Computation Pad

Little Salmon

Top of Summit Site Photos 1-4



Top of Summit RWIS Site

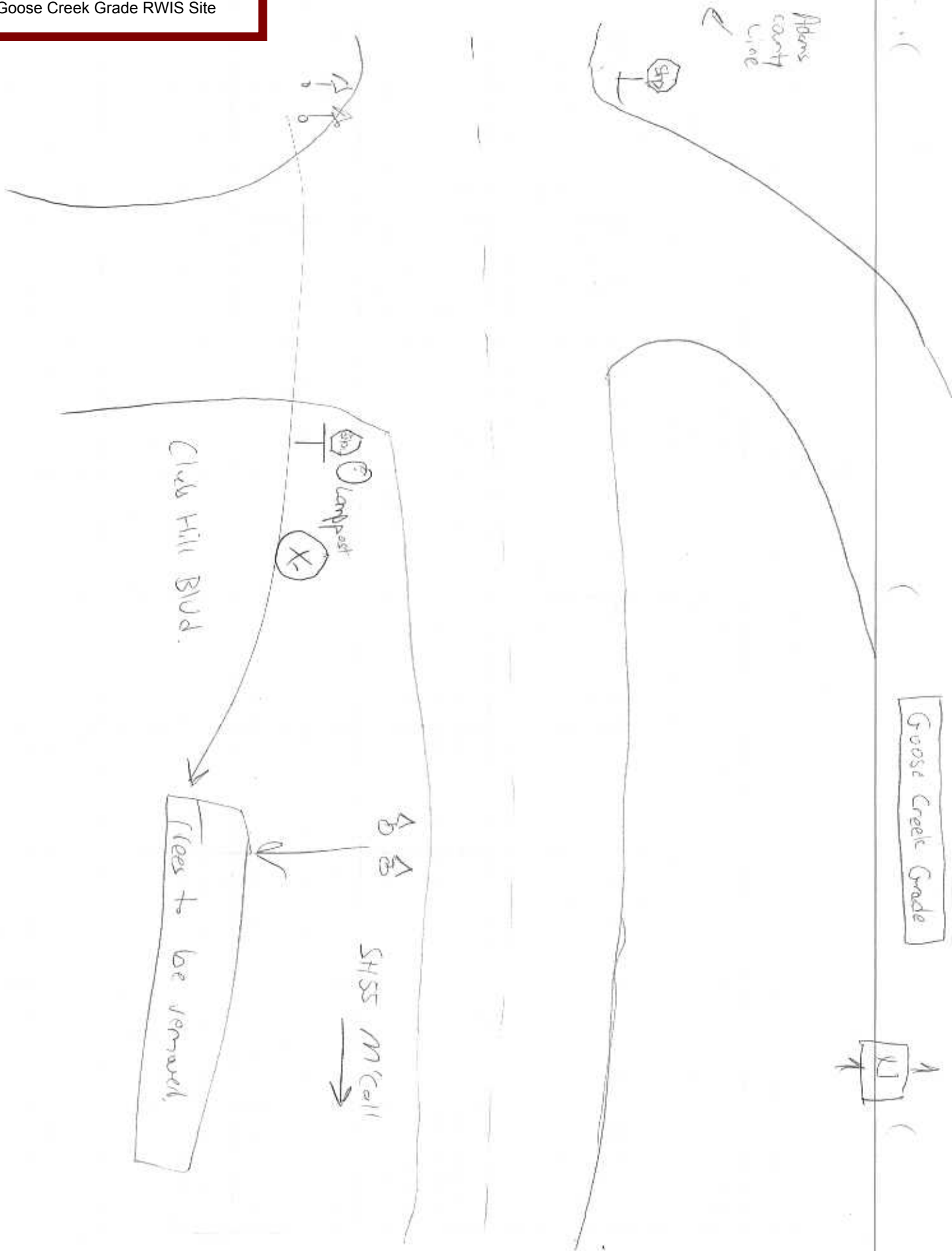


Goose Creek Grade Site Photos 1-4



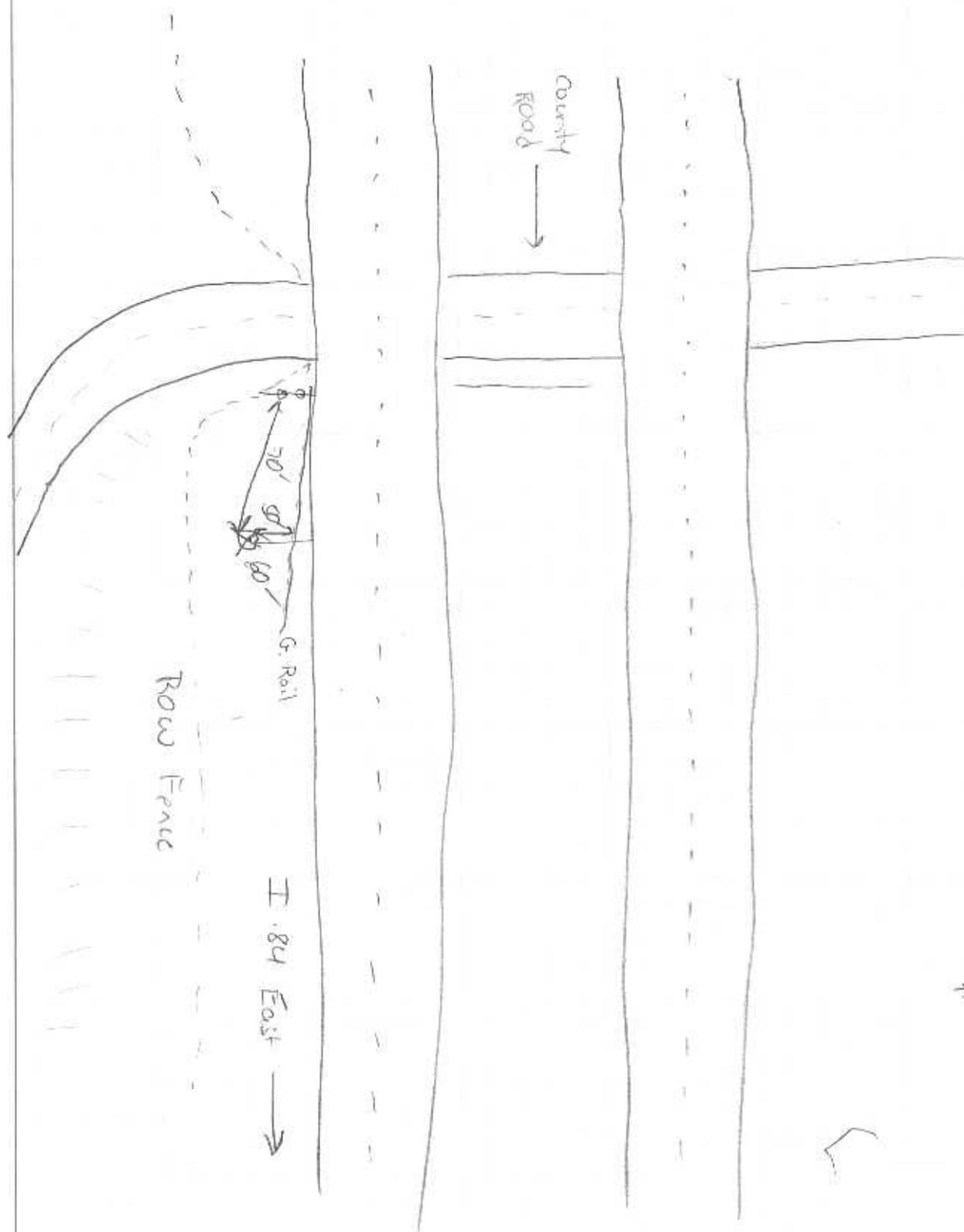
Goose Creek Grade RWIS Site

No. 937 811E
Engineer's Computation Pad



I-84/US-95 IC Site Photos 1-4





I-84/US95-ITC

District 4 RWIS Sites

Juniper IC Site Photos 1-4



Juniper Interchange RWIS Site

STAEDTLER®
No. 937 811E
Engineer's Computation Pad

ITD Row.



285-

EB I84 →



ITD Row.

3



Juniper Interchange

Heyburn IC Site Photos 1-4

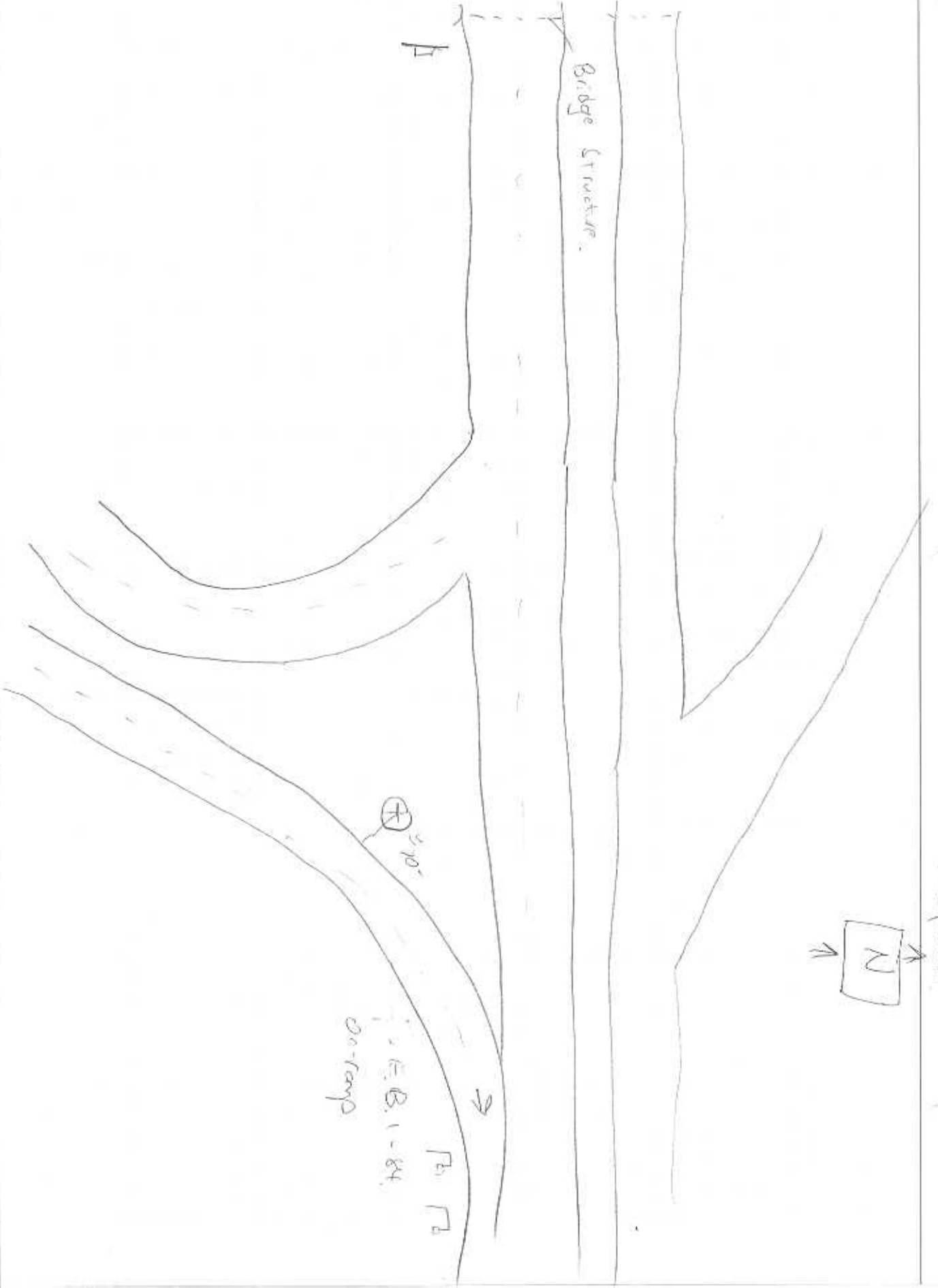


Heyburn Interchange RWIS Site

No. 937 811E
Engineer's Computation Pad



Ron R.
3/24/2006

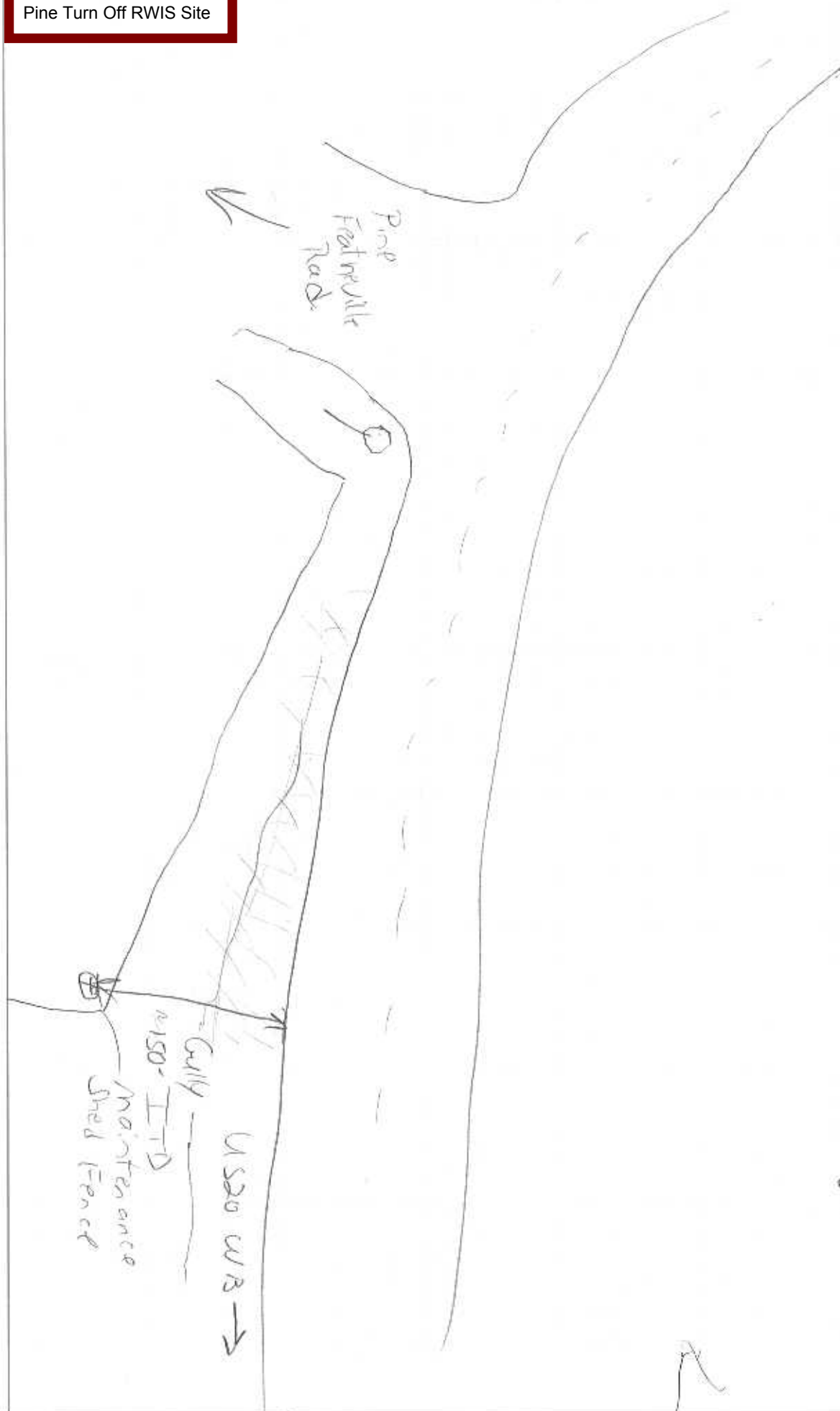


Heyburn

Pine Turn Off Site Photos 1-4



Pine Turn Off RWIS Site

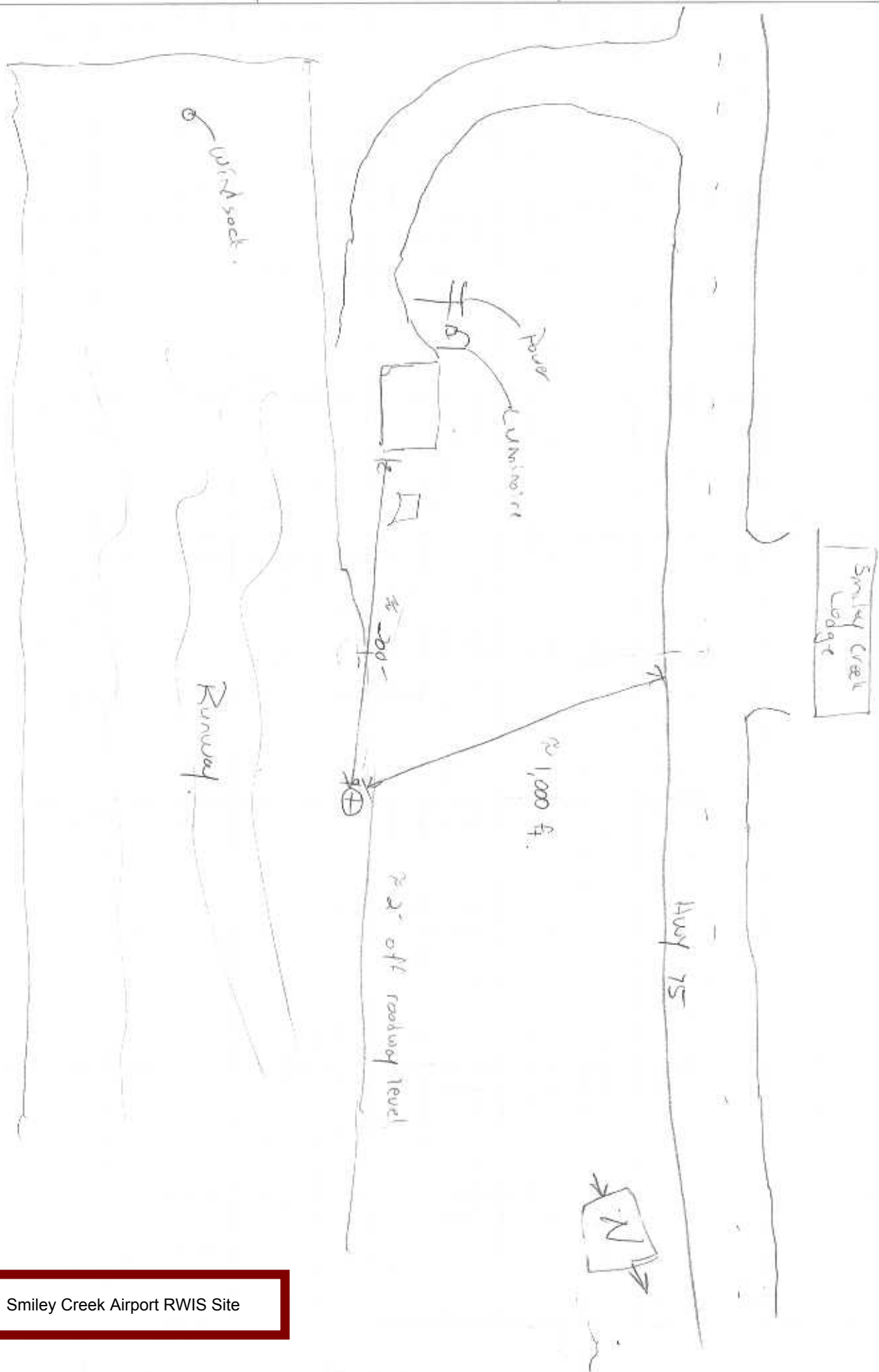


Pine Turn-off

Smiley Creek Airport Site Photos 1-4



Smiley Creek Airport RWIS Site

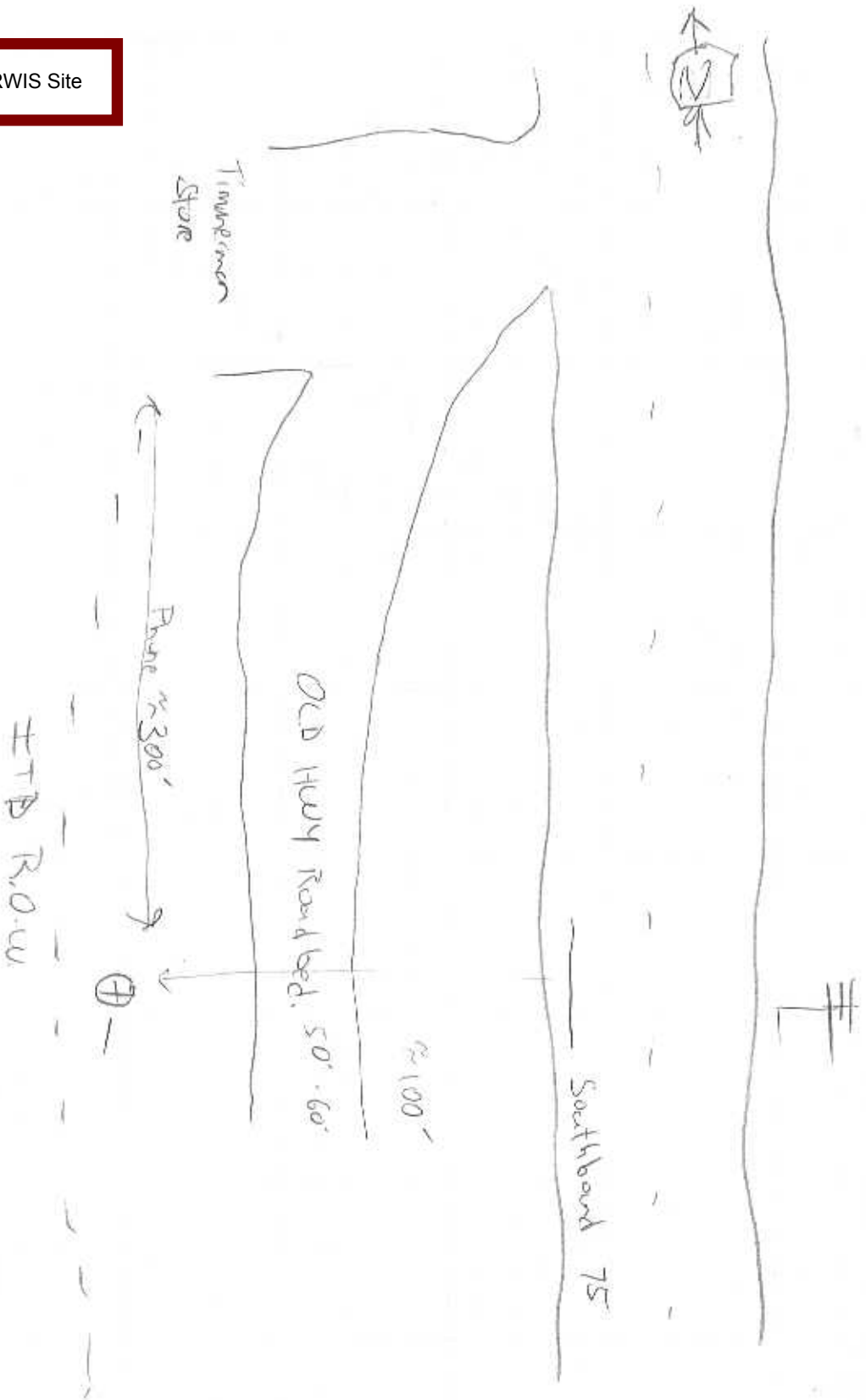


Smiley Creek Airport

Timmerman Hill Site Photos 1-4



Timmerman Hill RWIS Site



Kinsey Butte Site Photos 1-4



Kinsey Butte RWIS Site

No. 937 811E
Engineer's Computation Pad

STAEDTLER

ITD ROW.

50-60'
75
South bound

Cell
Tower

Kinsey

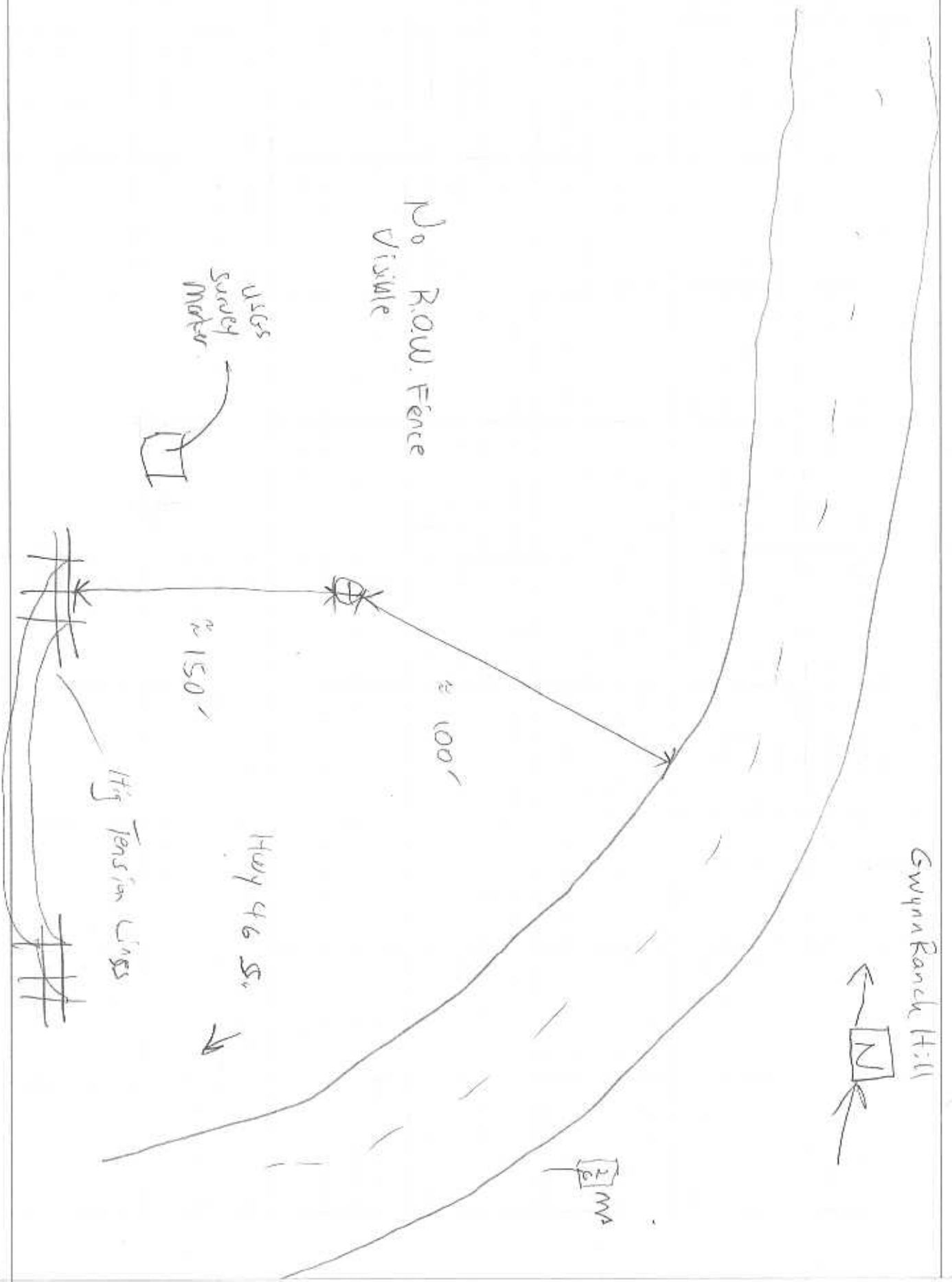
Gwynn Ranch Hill Site Photos 1-4



Gwynn Ranch Hill RWIS Site

No. 937 811E
Engineer's Computation Pad

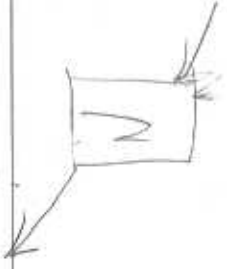
STAEDTLER®



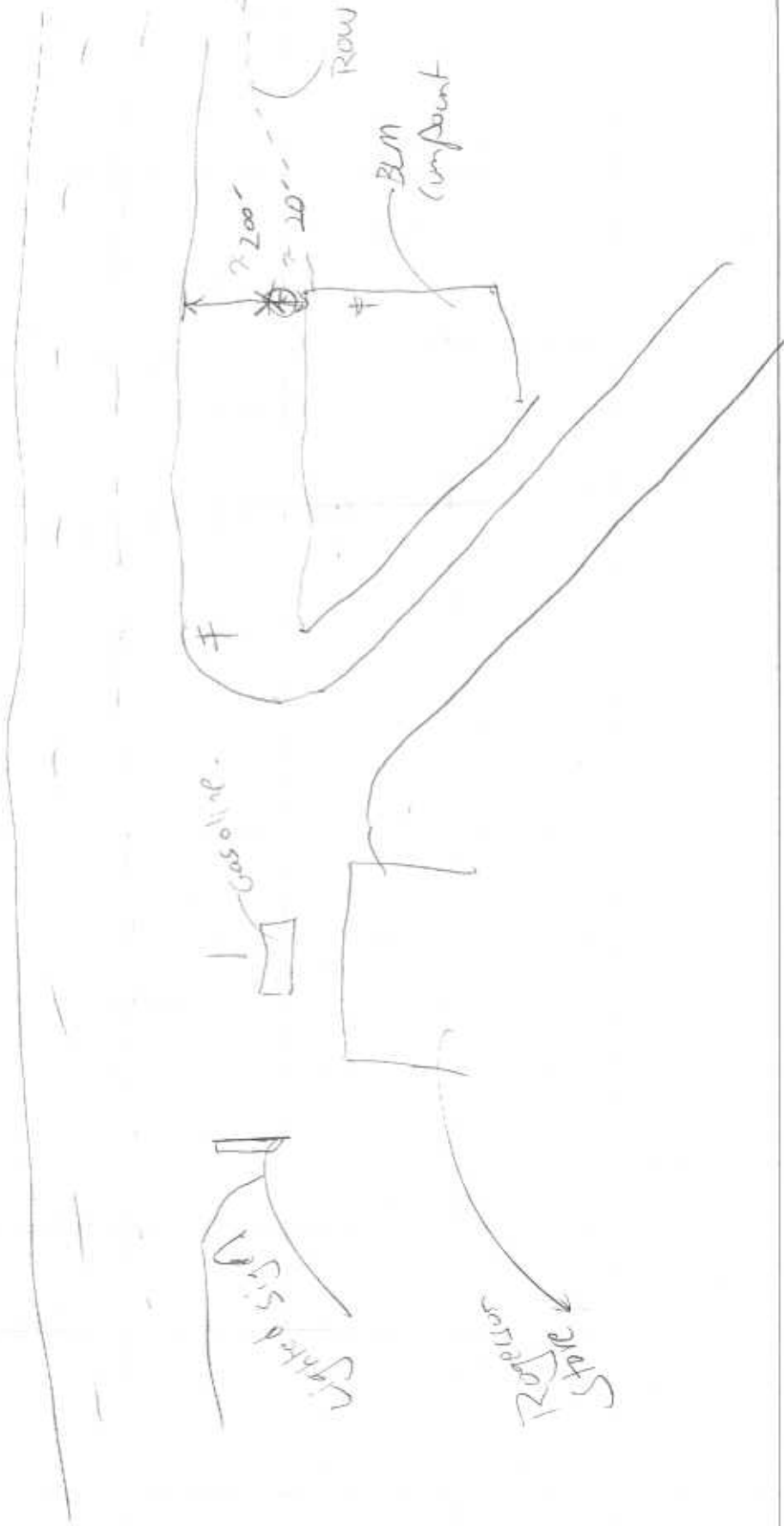
Rogerson Site 1 Photos:



Rogerson #1



US93 SB →



Rogerson RWIS Site

Connor Summit Site 2 Photos 1-4



Connor Summit RWIS Site



ITD R.O.W.

Hwy 77 SB →



"Tin Shed"



Connor Summit 2

Idahome IC Site Photos 1-4



ITD ROW

~ 90'
~ 90'

Level with roadway
No visible power drops

Bridge



Idahome IC,

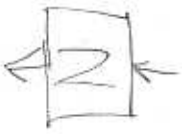
Idahome Interchange RWIS Site

District 5 RWIS Sites

Arbon Valley Site Photos

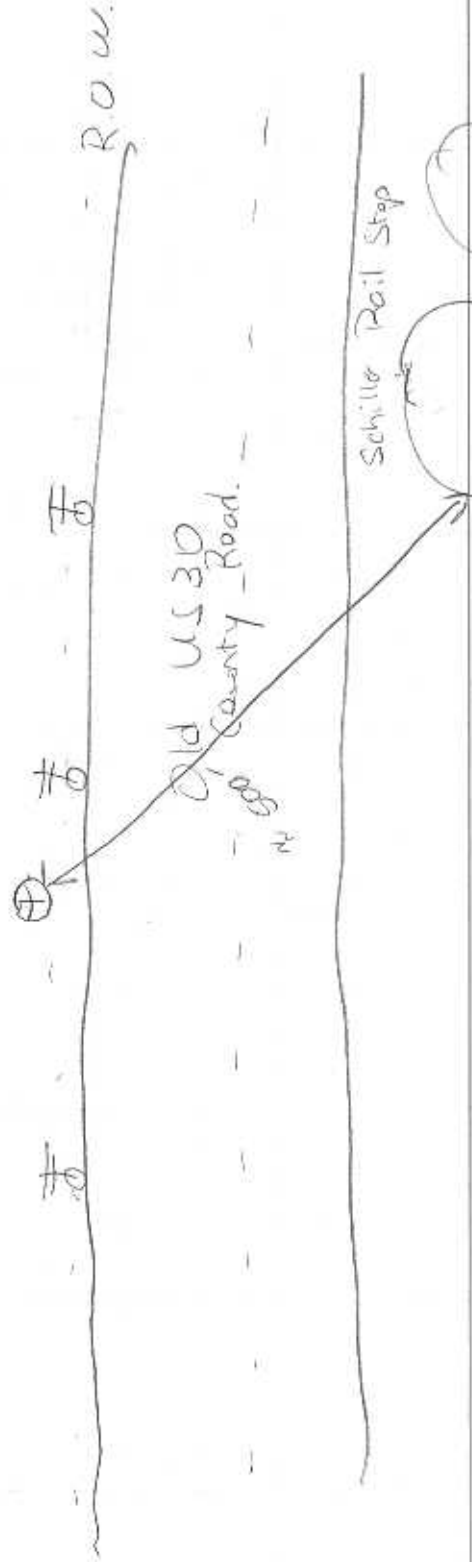


Arbon Valley



I 86 WB

I 86 EB →



STAEDTLER

No. 937 811E
Engineer's Computation Pad

Old Elevators

Arbon Valley RWIS Site

District 6 RWIS Sites

Tom Cat Summit Site Photos



Trailer in Turnout



Dan Standing at Site



Looking Southwest

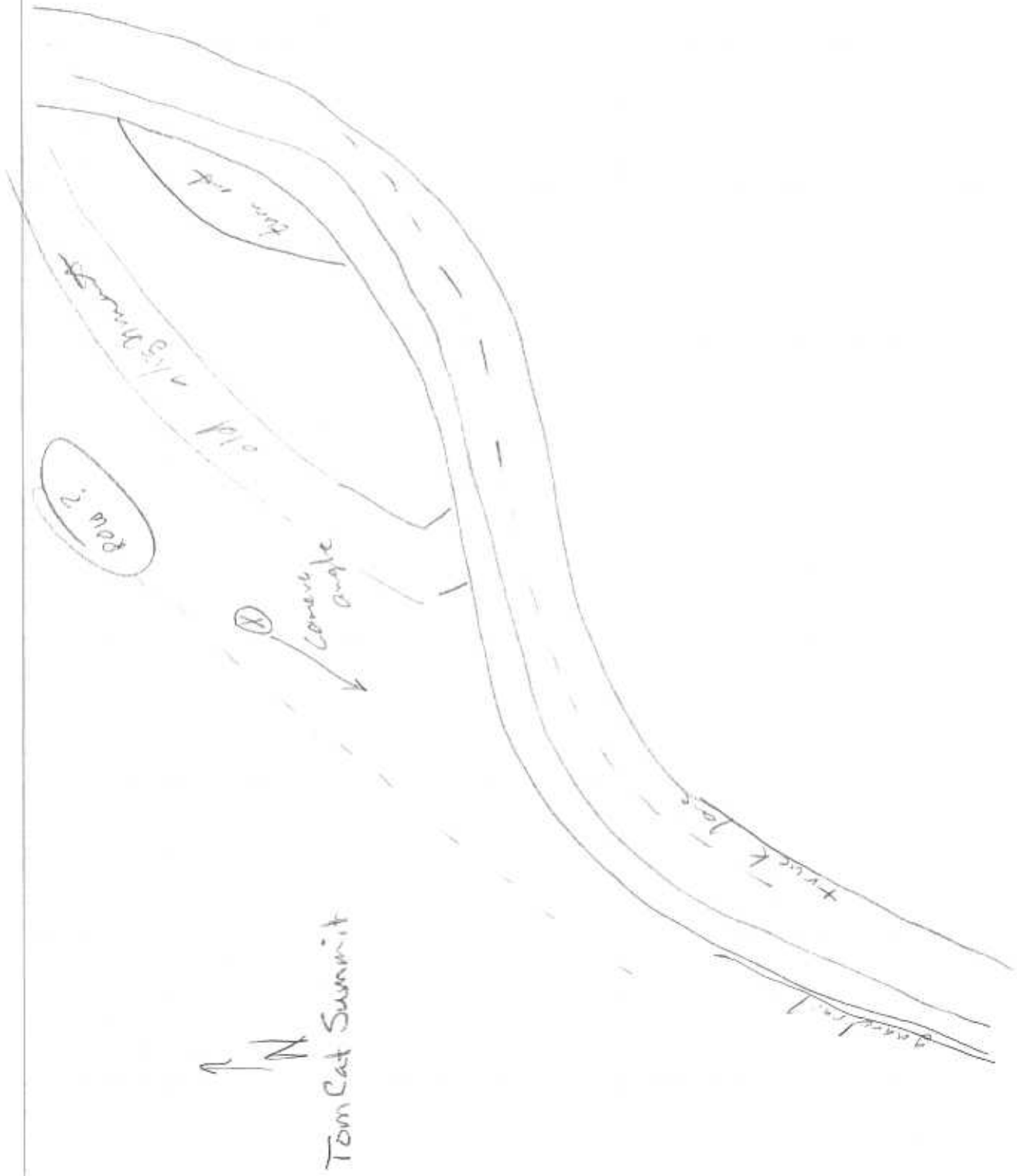


Looking East down at roadway

Tom Cat Summit

Tom Cat Summit RWIS Site

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



Henry's Lake Site Photos



Phone box



Looking South



Looking North



Looking East

Henry's Lake Flat North

Henry's Lake RWIS Site

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



May consider a site
North of (X) to get
closer to power.

convey
direction

← to Henry's Lake State Park

Hwy
87

↑
N



there is
a business
and power here.

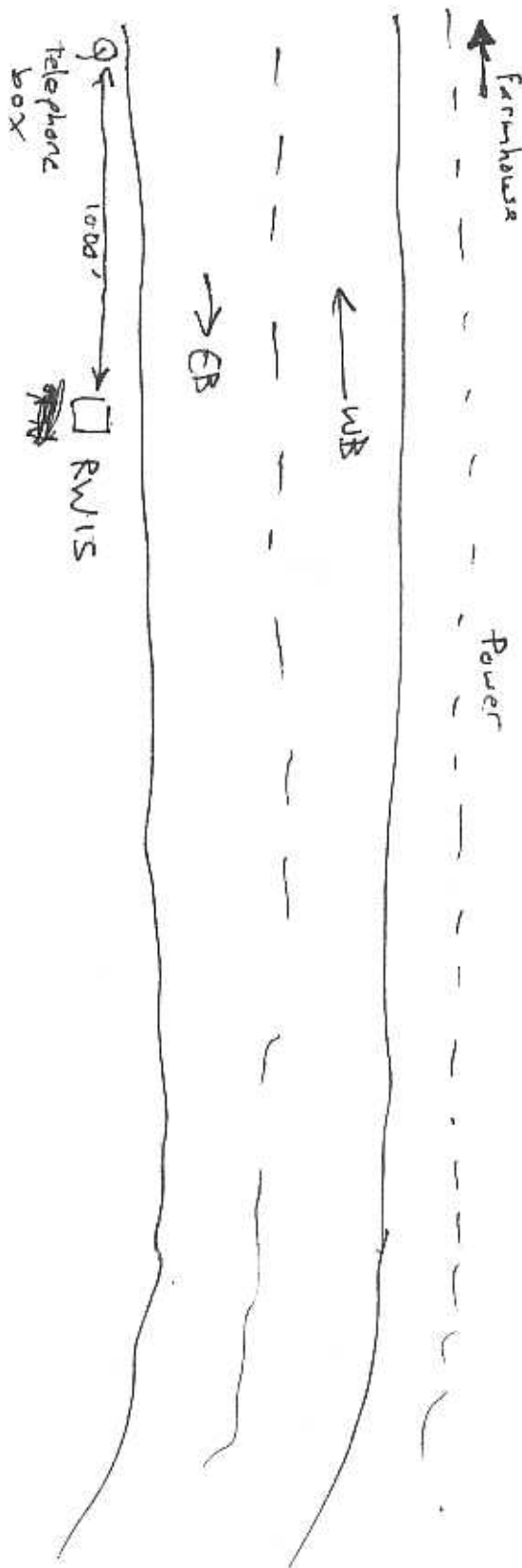
Botts Site Photos 1-4:



~~SH 32~~

SH 32 MP 120.3

Botts



China Point Site Photos:



Looking West



Looking North



Looking Southwest



Site in foreground

China Point

China Point RWIS Site

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



N

Sum
Fence

7.
X
Kauai
angle

Power

Power

Gilmore Site Photos:



Looking Northwest



Southeast at phone box



Looking Southwest at corner post

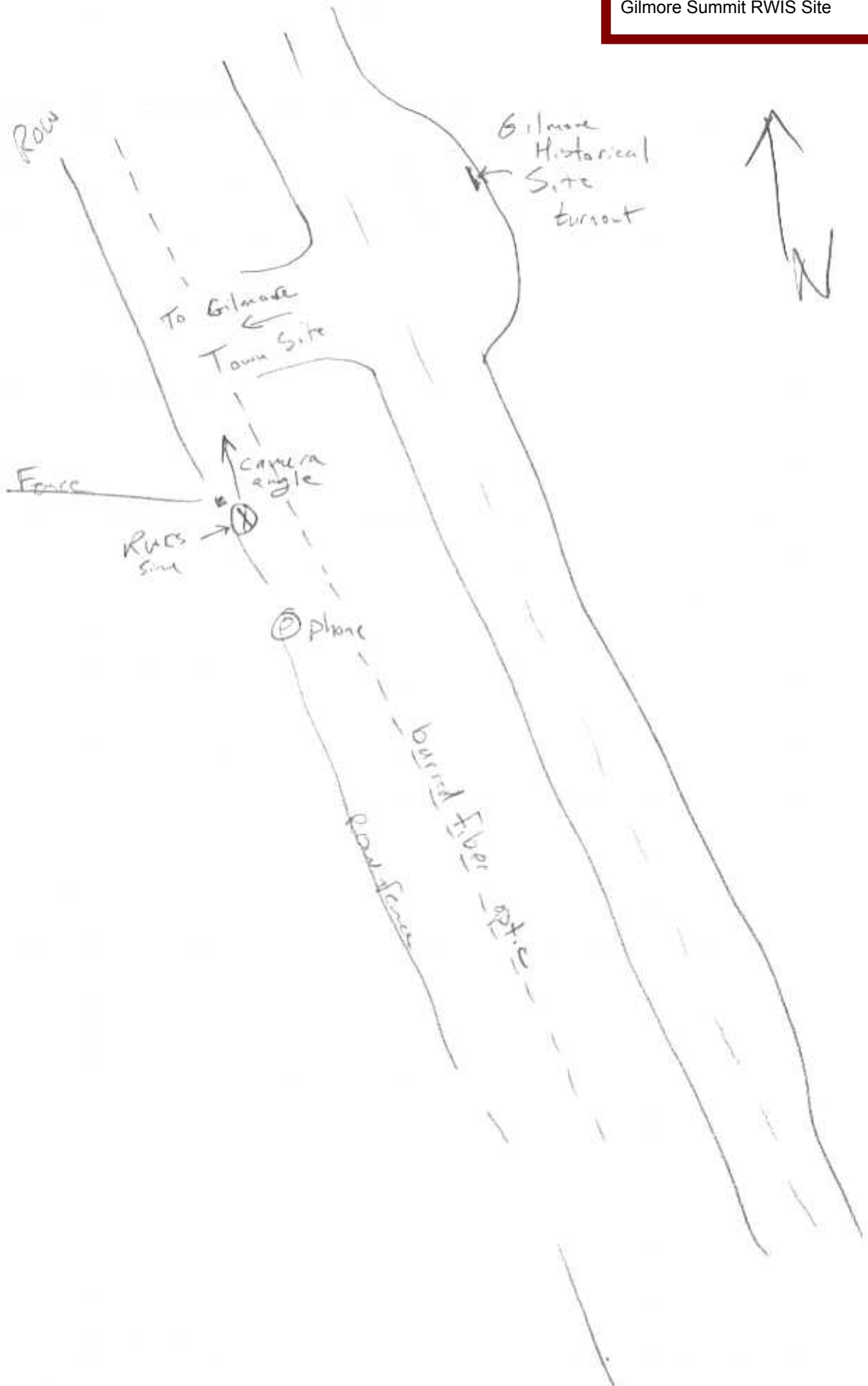


North at Historic site

Gilmore

Gilmore Summit RWIS Site

22-141 50 SHEETS
22-142 100 SHEETS
22-143 200 SHEETS



Willow Creek Site Photos



Site in foreground



Looking Southwest; site in foreground



Looking Northwest; slope flattening

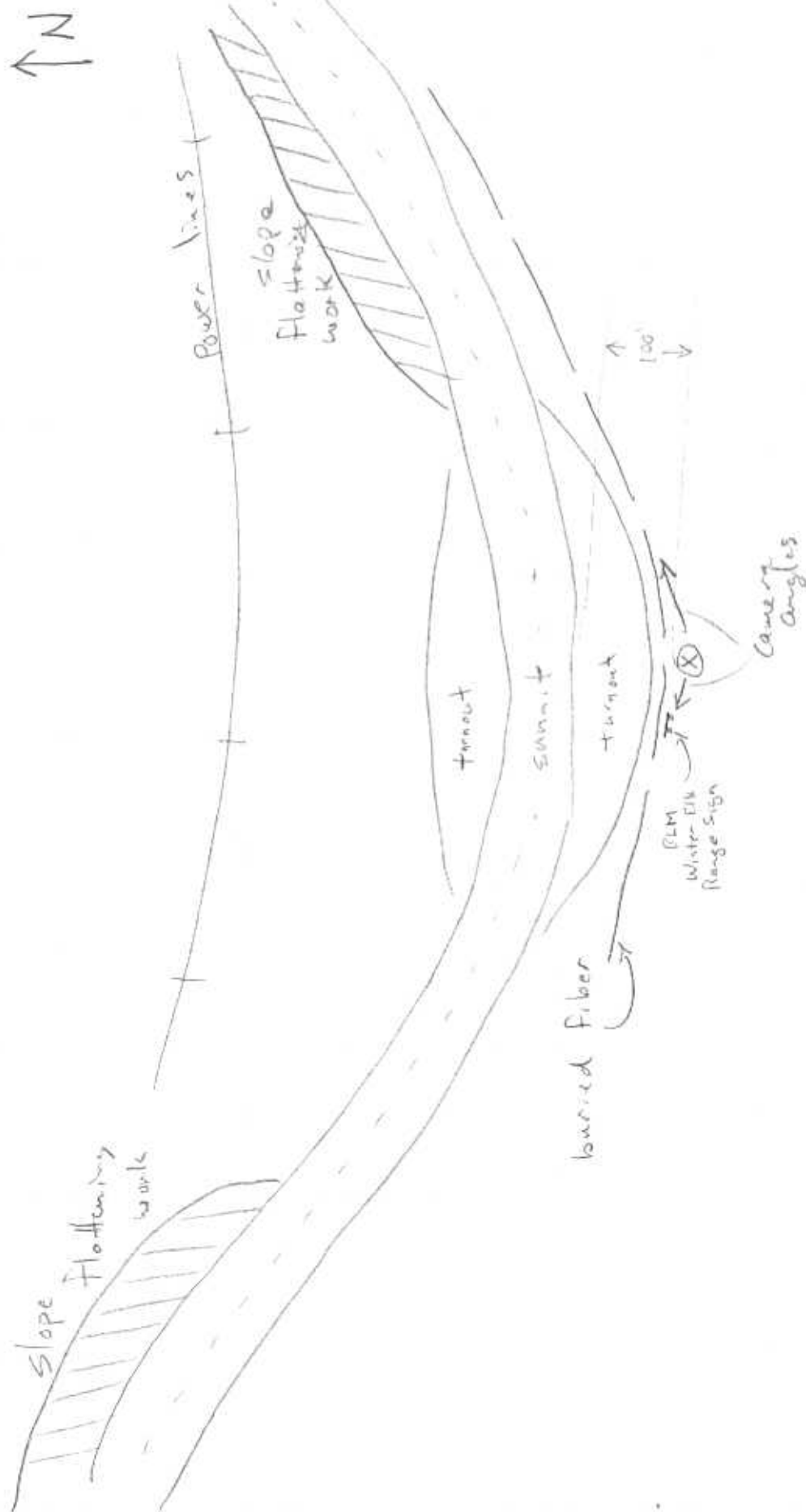


Looking Southeast



Willow Creek Summit

Willow Creek Summit



Lone Pine Site Photos:



Looking at Site



Looking Northwest



Looking Southwest



Power & Phone

Lone Pine

Lone Pine RWIS Site

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



N
↑



Power
Phone

power

Camp Creek Site Photos:



Looking North



Looking South 2



Looking South



Darrin at Site on Berm

Camp Creek

Camp Creek RWIS Site

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



N

SB

NB

position on
top of
lower basin to
north

Common angle

Trees

MP 183

Osgood Payne Site Photos



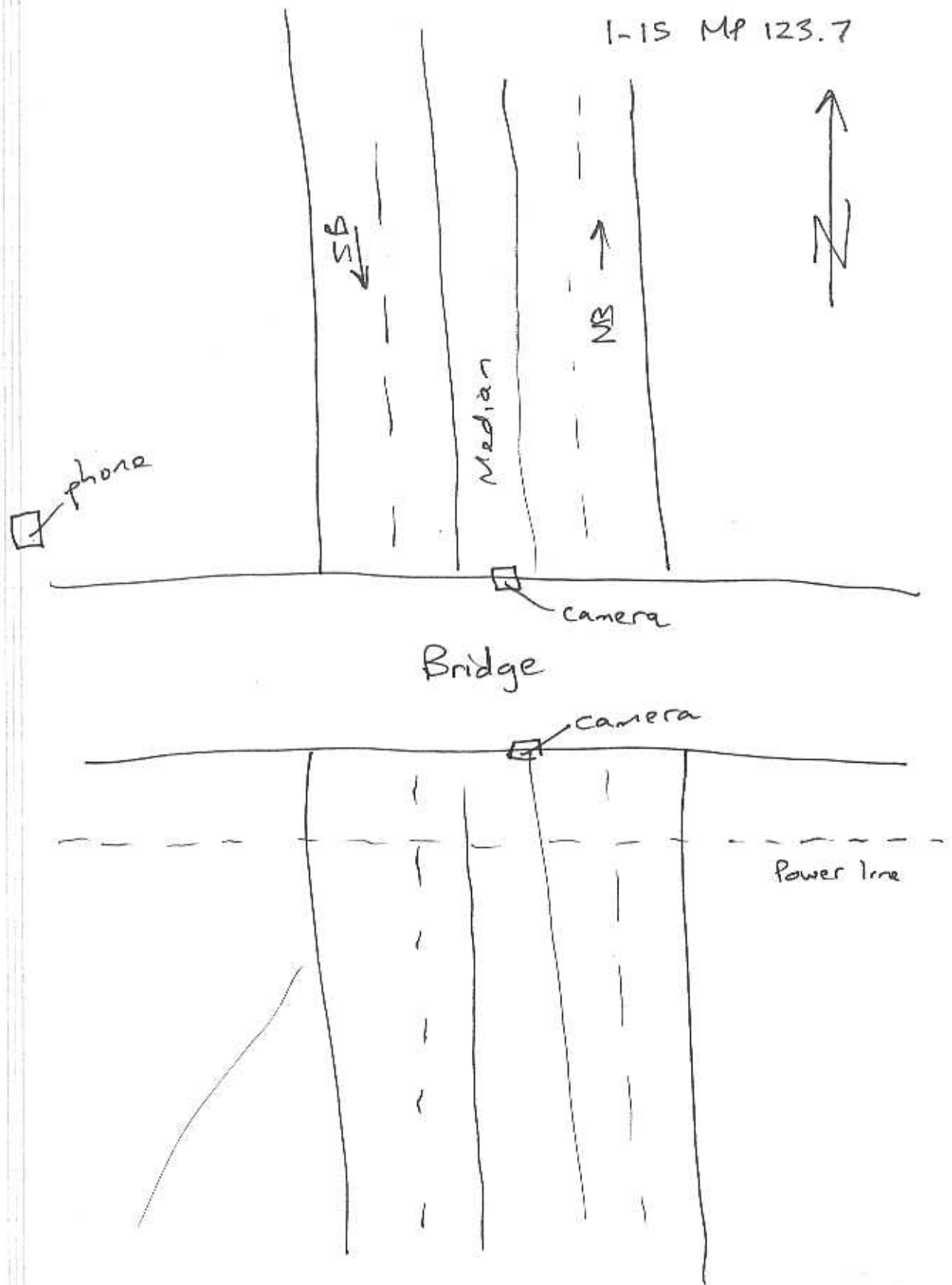
Southbound



Northbound



Bridge



Lost Trail Pass Site Photos



Looking South



Looking West



Looking Southwest

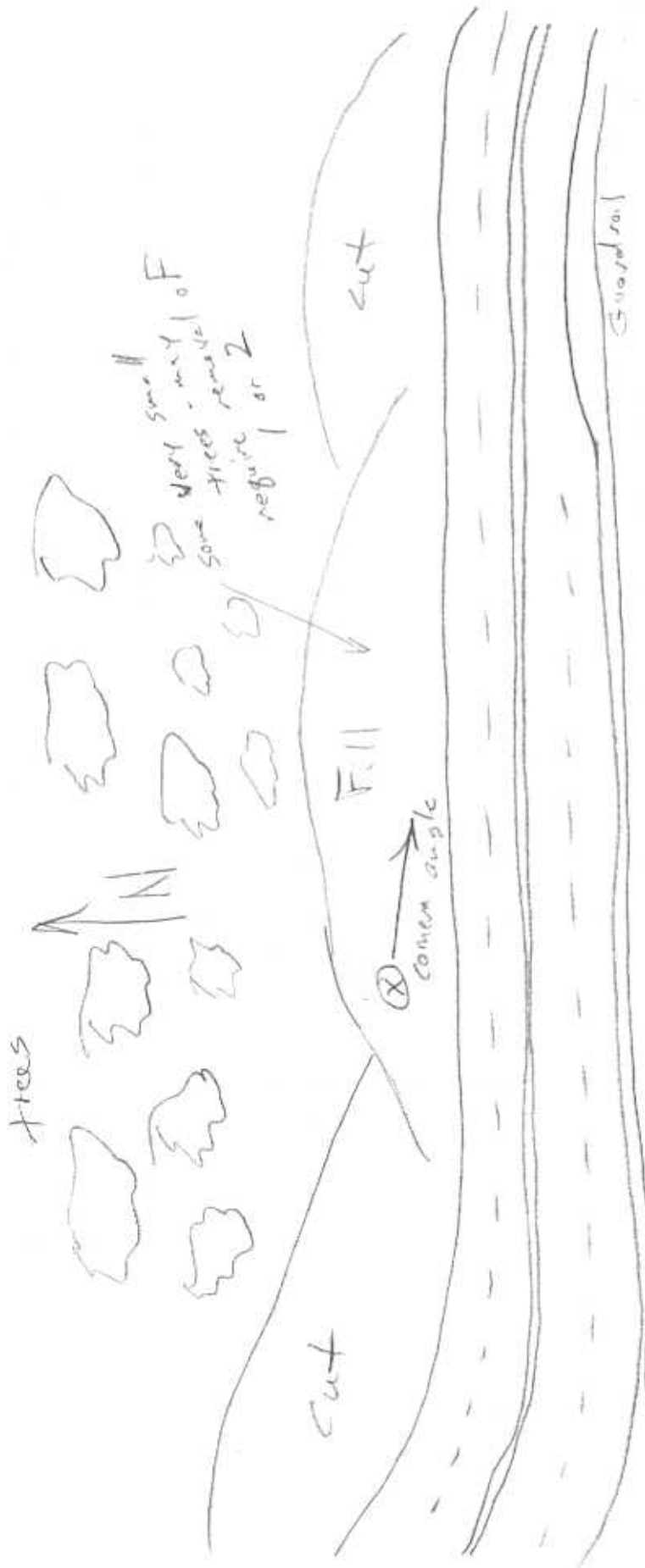


Site at toe of slope

Lost Trail Pass

Lost Trail Pass RWIS Site

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



IDAHO TRANSPORTATION DEPARTMENT

ROAD WEATHER INFORMATION SYSTEM BUILD-OUT PROJECT

REQUEST FOR PROPOSALS
Requisition K-000670

Date of Release: April 4, 2006

Bid Proposals Due: May 11, 2006

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Attachment A – New Build Out Site List

Attachment B – New Build Out Site Map

Attachment C – Camera Specification

Attachment D – Data Integration Specification

Attachment E – ITD First Line Maintenance Functions

Attachment F – Signature Page

1.0 TERMS AND CONDITIONS

1.1 CONTRACT TERM

The contract resulting from this RFP will commence as soon as possible after the successful vendor has been selected. It is anticipated that the contract will be for an initial period of 3 years with the option of two, two-year renewals.

Contract terms are subject to funding levels.

1.2 CONTRACT DOCUMENT

The resulting contract will consist of: (1) this RFP, and any addenda issued hereto; and (2) the selected bidder's proposal submitted in response to the RFP and any negotiated amendments.

1.3 PRIME CONTRACTOR

Bidder will be the sole point of contact for the contract. Bidder will not subcontract any work under the contract to any other firm except as listed in Section 5.1. The bidder is totally responsible for all actions and work performed by its subcontractors. All terms, conditions, and requirements of the contract will apply without qualification to any services and work performed by any subcontractor of the bidder.

1.4 INDEPENDENT CONTRACTOR

Both ITD and Contractor, in the performance of this contract, will be acting in their individual capacity and not as agents, employees, partners, joint ventures, nor associates of one another. The employees or agents of one party will not be deemed or construed to be the employees or agents of the other party for any purpose whatsoever except the bidder's employees will be deemed agents of ITD for the purpose of confidentiality.

1.5 OWNERSHIP OF MATERIALS

All data, procedures, descriptions, workflows and recommendations accumulated by the bidder under the contract resulting from this RFP will be owned by ITD. The bidder may not release any such data without the written approval of ITD.

1.6 NEWS RELEASES

The State is the only entity authorized to issue news releases relating to this RFP, its evaluation, award, or any contract and performance there under.

1.7 ADMINISTRATIVE REQUIREMENTS

Disputes

Should any disputes arise with respect to the contract, the bidder and the State agree to act immediately to resolve such dispute. The bidder agrees that the existence of the dispute notwithstanding, it will continue without delay to carry out all its responsibilities under the contract of all non-disputed work; any additional costs incurred by the bidder or the State as a result of such failure to proceed will be borne by the bidder, and the bidder will make no claim against the State for such costs.

Termination for Convenience

ITD may terminate the contract or any part of the contract resulting from the RFP without penalty to either party upon fourteen (14) day's written notice. All work completed by the consultant under the contract up to the date of termination becomes the property of the State. ITD will pay the contractor a proportion of the contract amount based on the percentage of completion of deliverables and payment schedule agreed to in the contract.

At the end of each phase, ITD reserves the right to either accept or reject the cost and project plan for the next phase. If ITD opts to reject the bidder's cost for the next phase, the contract will be terminated and that phase will be put out to bid. If the contract is terminated, the consultant will not be able to bid on the remaining phases in accordance with Idaho Code § 67-5726(6).

Termination for Default

The determination that the bidder is in default will be made by the State.

The State may, by written Notice of Default to the bidder, terminate the whole or any part of the contract in any one of the following circumstances.

If the bidder fails to make delivery of the services as specified in the contract.

If the bidder fails to perform any of the other provisions of the contract, or fails to make satisfactory performance of the contract in accordance with its terms and in either of these two circumstances does not cure such failure within a period of ten (10) calendar days (or such longer period – to a maximum of 30 days- as the State may authorize in writing) after receipt of written notice from the State specifying such failure.

The bidder will not be held in default if the failure to perform the contract arises out of causes beyond the control of and without fault or negligence on the part of the bidder. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the government, fires, floods, epidemics, quarantine restrictions, strikes from outside the bidder's firm, and unusually severe weather.

If the contract is terminated by default, ITD, in addition to any other rights provided in this clause, may require the bidder to transfer title and deliver to ITD in the manner and to the extent directed by ITD, any completed materials.

The rights and remedies of the State provided in this clause will not be exclusive and are in addition to any other rights and remedies provided by law or under the contract.

Independent Price Determination

A proposal will not be considered for award if the price in the proposal was not arrived at independently and without collusion, consultation, communication, or agreement as to any matter related to such proposal with any other bidder, competitor, or public officer.

Inspection and Approval of Work

The bidder will permit the project manager or duly authorized representative to inspect and audit all work, material and other data and records connected with this contract.

Retention of Records

The bidder will be required to maintain accounting records and other evidence pertaining to the costs incurred and to make the records available at their office at all reasonable times.

Responsibility to Employees

The bidder accepts full responsibility for payment of unemployment insurance, worker's compensation, and social security, as well as all income tax deductions, and any other taxes or payroll deductions required by the law for its employees engaged in the work authorized by the contract.

Option to Obtain Services Outside of the Contract Resulting from this Request for Proposals

ITD reserves the right to contact separately for other services within the scope of this project and in the best interest of the State.

Public Disclosure of Information Contained in Proposals and Bidder's Responsibilities

Proposals received shall remain confidential until the letters of intent have been issued. Thereafter, all proposals submitted in response to this request shall be deemed public record. In the event that a bidder desires to claim portions of its proposal as exempt from disclosure, **it is incumbent upon the bidder to identify those portions.**

At the time of bid submittal, each page, or portion thereof claimed to be exempt from disclosure must be clearly identified by placement of a stamped, typed or other notation employing such language as "trade secret", "proprietary", or

“confidential” in the lower right-hand corner of each relevant page. In addition, if a bidder has claimed certain portions of the bid proposal to be exempt from disclosure, **the bidder shall provide substantiation of the claim in the bid proposal**, which can be included as an appendix. The substantiation should address the following: the specific portions which are alleged to be entitled to confidential treatment; measures taken by the bidder to guard against nonconsensual disclosure of the information to others, and the means by which such measures will be continued; the extent to which the information has been disclosed to others and the precautions taken; pertinent confidentiality determinations, if any, by other state or federal agencies; any other relevant facts to support the claim that the information meets the definition of “trade secret”; and, if appropriate, the reason that the information is not required to be disclosed by state or federal statute. (IDAPA 58.01.21.014.03)

ITD will consider a bidder’s request(s) for exemption from disclosure; however, ITD will make a decision predicated upon applicable law. An assertion by a bidder that the entire proposal is exempt from disclosure will not be honored.

Changes in RFP

Changes made in the RFP as a result of responses made to concerns must be made before bid closing date and time

Withdrawal or Revisions of Proposals

A bidder may withdraw or revise a bid after it has been deposited with the State, provided the request for such withdrawal or revision is received by the State, in writing or by facsimile transfer, before the time set for opening bids.

Insurance Requirements

The following is a brief explanation of the required insurance coverages. A certificate of insurance will be required of the contractor selected.

1) Worker’s Compensation. The CONTRACTOR, its subcontractor(s), if any and all employers providing work, labor or materials under this contract are subject employers under the Idaho Worker’s Compensation Law, and shall comply with Idaho Statutes regarding Worker’s Compensation.

For the duration of this Contract, and until all work specified herein is complete, the CONTRACTOR, its subcontractor(s), if any, and all employers providing work, labor or materials under this contract shall provide Idaho Worker’s Compensation coverage that satisfies Idaho law for all their subject workers.

The CONTRACTOR must have a valid Worker’s Compensation insurance policy in effect prior to the Division of Purchasing generating the contract. The CONTRACTOR must show proof of such coverage by presenting to

the Division of Purchasing a valid certificate of insurance showing statutory coverage.

The contractor must provide either a certificate of workers' compensation insurance issued by a surety licensed to write workers' compensation insurance in the State of Idaho, as evidence that the contractor has in effect a current Idaho workers' compensation insurance policy, or an extraterritorial certificate approved by the Idaho Industrial Commission from a state that has a current reciprocity agreement with the Industrial Commission.

2) Employer's Liability. This coverage is written in conjunction with Worker's Compensation and provides insurance for the employer's liability to its employees in circumstances where the injury is not covered by the Worker's Compensation law and the employer may be subject to common law liability. Employer's liability insurance shall be a minimum amount of \$100,000 per occurrence.

3) Liability Insurance. For the duration of the Contract and until all work specified in the Contract is completed, the CONTRACTOR shall have and maintain, at CONTRACTOR'S expense, the liability insurance set forth below and shall comply with all limits, terms and conditions of such insurance.

Work under this Contract shall not commence until evidence of all required insurance is provided to the Division of Purchasing. Evidence of insurance shall consist of completed certificate of insurance signed by the insurance agent for the CONTRACTOR and made a part of this Contract.

Required Insurance:

Commercial General Liability Insurance. The CONTRACTOR shall have and maintain Commercial General Liability (CGL) Insurance covering bodily injury and property damage. This insurance shall include personal injury liability coverage, blanket contractual liability coverage for the indemnity provided under this Contract and products/completed operations liability. The combined single limit per occurrence shall not be less than \$1,000,000 or the equivalent. Each annual aggregate limit shall not be less than \$2,000,000, when applicable, and will be endorsed to apply separately to each job site or location.

Additional Requirements:

State of Idaho as Additional Insured. The liability insurance coverage required for performance of the Contract shall include the State of Idaho, the Idaho Transportation Department and its division, officers and employees as additional insured, but only with respect to the CONTRACTOR'S activities to be performed under this Contract.

Notice of Cancellation or Change. The CONTRACTOR shall ensure that all policies of insurance are endorsed to read that there shall be no cancellation, material change, potential exhaustion of aggregate limits or intent not to renew insurance coverage(s) without sixty (60) days prior written notice from the CONTRACTOR or its insurer to the Idaho Transportation Department. CONTRACTOR shall further ensure that all policies of insurance are endorsed to read that any failure to comply with the reporting provisions of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverage(s) provided to the State of Idaho, Transportation Department and its divisions, officers and employees.

Incurring Costs

ITD will not be liable for any costs associated with the preparation and presentation of a proposal submitted in response to this RFP.

1.8 CONTRACTOR'S RESPONSIBILITIES

Public Works Licensing

In accordance with Idaho Code § 54-1902, the bidder, and all subcontractors, at the time of contract award, must hold a current public works license. A copy of the public works license, or license application, shall be submitted with the bidder's proposal.

2.0 DEFINITIONS

The following definitions apply to this RFP.

Term / Acronym	Definition
Contract	Comprises the RFP, any addenda thereto, the bid proposal, any negotiated amendments and the purchase order. The contract constitutes the entire agreement between the state and the contractor.
SI	System Integrator. A person, partnership, firm, corporation, or joint venture submitting a bid proposal for the purpose of obtaining a state contract.
ITD	Idaho Transportation Department
RWIS	Road Weather Information System
RWIDS	Road/Weather Integrated Data System
ESS	Environmental Sensing Station
DITP	Data Integration and Test Plan
RFP	Request for Proposals
PM	Program Manager
NTCIP	National Transportation Communications for Intelligent Transportation Systems Protocol
M&O	Maintenance and Operations

3.0 GENERAL INFORMATION

3.1 PURPOSE

The purpose of this RFP is to solicit sealed proposals to establish a contract between the Idaho Transportation Department (ITD) and a System Integrator (SI), for the installation, maintenance and operation of Road Weather Information System (RWIS) sites within the ITD RWIS Network. ITD requires innovative solutions that effectively balance initial costs, technical risk, and life-cycle costs. Details regarding the required scope of work and technical requirements are presented in this request for proposals.

3.2 BACKGROUND

ITD currently operates 37 RWIS sites throughout the state. The ITD sites, and other environmental sensing stations (ESS), provide information for the Road/Weather Integrated Data System (RWIDS) as part of a comprehensive network of road condition and weather information for use by ITD and the public. ITD has identified the expansion of its current RWIS network as a key strategic initiative. This expansion effort will lead to a greatly expanded statewide observation capability and a more centralized maintenance, operation and control structure for RWIS sites and the information generated by them.

3.3 SCOPE OF WORK

ITD desires to contract with a SI for installation, maintenance and operation of new sites within the ITD RWIS Network. The estimated duration of the contract would be 3 years, during which the SI would install, maintain and operate approximately 49 new RWIS sites throughout the state. (The actual duration and number of sites is subject to funding levels and other programmatic considerations.) These sites are described, in detail, within the ITD RWIS Build Out Site Assessment Report¹, and are listed in Attachment A. In addition, ITD reserves the right to negotiate an amendment to the contract with the SI for upgrade / integration of all, or some portion of, 33 existing ITD RWIS sites.

The SI agrees to provide maintenance, operations and reporting as necessary; to ensure proper and consistent data transmission and collection capabilities from the installed RWIS Equipment and Sensors, to ITD as required herein.

The scope of this procurement includes all equipment, labor, parts, traffic control, materials and technical expertise to install, maintain and operate new ITD RWIS sites, and possibly existing RWIS sites, for a period of 3 years, with the option of

¹ Copies of this report are available from ITD.

Contact Tina Klamt; Phone: 208.334.8088 E-mail: <mailto:Tina.Klamt@itd.idaho.gov>

two, 2 year renewal periods. The RWIS system must be fully guaranteed by the SI to provide proper and consistent data transmission for the contract period. The SI will be responsible for all repairs and maintenance required to keep the new RWIS sites operational, including maintenance of the system for transmission of data from the RWIS sites.

The SI does not have the right to the data that is collected from the RWIS sites unless it is negotiated with ITD for its use.

3.4 DELIVERABLE REQUIREMENTS

Within 20 days² after contract award, the SI must deliver a finalized Project Management Plan (PMP) for ITD approval. The PMP will comprise:

- Detailed work breakdown structure to the task and sub-task level.
- Project Gantt chart showing key milestones for all deliverables, and, detailed timelines for the first year and second year site build-out.
- Identification of any ITD resource requirements.
- List of key schedule assumptions.

The PMP must provide sufficient detail to allow for management and oversight of the project. For example, a number of tasks are required for installation of a single RWIS site, such as, procurement of materials, mobilization, site preparation, installation and commissioning. It is anticipated that this level of detail will be provided in the PMP. Project work will begin after ITD approves the finalized PMP. The finalized, approved PMP will become an amendment to the contract.

Within 20 days after contract award, the SI must provide a set of drawings and test plans. Drawings will show the standard construction and mechanical design for the typical RWIS to be installed under this contract, including tower and/or roadside structure(s), foundation and fencing, to be installed under the contract, in compliance with Section 4.5. Test plans will detail the SI's procedures for testing each RWIS installation, in compliance with Section 4.9.

Within 45 days after contract award, the SI must submit a Data Integration Test Plan (DITP), covering the new RWIS sites installed under this contract, to ITD, for approval. The DITP will provide an end-to-end testing scenario that meets the requirements defined in Section 4.8.

Within 60 days after contract award, the SI must provide test files based upon the SI's Data Integration System. The test files will be tested using the DITP. Success will be confirmed by RWIDS successfully processing and displaying the information contained in the test files.

² All reference to days refers to business days.

Within 90 days after contract award, the SI must provide, for ITD approval, operations and maintenance training plans, including a preventative maintenance manual, to meet the requirements detailed in Sections 4.12 and 4.14.

Upon award, ITD will provide the SI a detailed inventory of the 33 existing sites, including location; operational status and equipment make and model. Within 90 days of contract award, the SI will submit a plan for integration of the existing RWIS sites, into the new RWIS network, managed by the SI. This plan should encompass the following elements:

- Any Recommended Hardware Upgrades
- Any Recommended Software Upgrades
- Any Recommended Facility Upgrades
- Detailed Cost Estimate
- Detailed Schedule Estimate

ITD requires a minimum of 24³ new RWIS sites be installed and commissioned prior to December 30, 2006 and 25, or the remaining number of new RWIS sites, prior to December 30, 2007. Note: The actual number of sites may vary dependent upon funding limitations and other unforeseen programmatic changes. These sites are detailed in Attachment A. For each installed site, the SI will provide a completed Final System Acceptance test report, in compliance with Section 4.9, and, a documentation package in compliance with Section 4.11.

For the term of the contract, the SI will provide for, and be responsible for, installing and maintaining all of the connections of phone, power, sensor and data collection lines at each site for proper operations, at all times. Recurring site electricity usage and site communication connection costs, excluding long distance charges, will be the total responsibility of ITD.

For the term of the contract, the SI will be responsible for, and provide for, all services to include management, administration, and coordination with utility/carrier, equipment, labor and incidentals within the contract bid price, per year.

Maintenance provided hereunder includes all expenses and costs incurred by SI to provide for all data and to maintain equipment in accordance with the requirements herein. This includes all SI supplied labor, traffic control, equipment, travel, lodging, meals, shipping and phone/carrier long distance costs. Any required materials/parts (M/P), which are not included as warranty replacements, will be paid separately and in addition to the annual bid price for services. M/P will be paid for, per pricing submitted in the cost proposal.

³ Four existing sites are scheduled for re-build and are included in this number.

For the term of the contract, the SI will provide ITD with an annual technical assessment of the SI maintained ITD RWIS network. The assessment should discuss recommendations for application of new sensor and communication technologies.

For the term of the Contract, the SI will provide ITD with unlimited (24/7) toll free telephone access to the SI's Customer Service Department.

For the term of the Contract, the SI will provide for all necessary traffic control. All traffic control costs will be the responsibility of the SI. Design and use of traffic control devices shall conform to the Manual on Uniform Traffic Control Devices⁴, as adopted by the state. Prior to any fieldwork within the Highway Right of Way, the SI shall submit a Traffic Control Plan to the appropriate District Traffic Engineer for approval. A separate Traffic Control Plan is required for each construction site.

For the term of the Contract, the SI will report all equipment and data transmission conditions to ITD on a monthly basis, per section 4.14.

Deliverable Summary

Description	Due
Project Management Plan	20 Days After Award
Standard Drawings & Site Testing Plan	20 Days After Award
Data Integration Test Plan	45 Days After Award
Test Data Files	60 Days After Award
Operations & Maintenance Training Plans	90 Days After Award
Existing RWIS Site Integration Plan	90 Days After Award
Minimum 24 First Year Sites Installed & Commissioned	December 30, 2006
25 (Remaining) Second Year Sites Installed & Commissioned	December 30, 2007
Annual Technical Assessment	Term of Contract
Management, Maintenance & Operations of RWIS Network	Term of Contract
Necessary Traffic Control	Term of Contract
Toll Free 24/7 Help Line	Term of Contract
Monthly Reporting	Term of Contract

⁴ <http://www.itd.idaho.gov/manuals/ManualsOnline.htm>

3.5 ISSUING OFFICE

Tina Klamt, Senior Buyer
Idaho Transportation Department
Division of Purchasing
P.O. Box 83720
Boise, ID 83720-0075

3.6 METHOD OF PAYMENT

All invoices for work under this contract must be submitted to the ITD RWIS PM described in Section 3.7, for approval.

Payments against approved invoices under this contract will be made based upon the following procedures:

Payments for RWIS Installation and Site Integration Work

Payment will be made upon receipt of a valid invoice for each RWIS site meeting construction, installation and commission criteria detailed in Section 4 of the RFP. The invoice should include a certification from the SI that the RWIS has passed the Final Acceptance Testing requirements detailed in Section 4.9 of the RFP, and certify the fact that the RWIS site(s) being invoiced meet all ITD requirements.

Payments for RWIS Maintenance and Operation

The SI will bill ITD monthly for maintenance and operation of the ITD RWIS Network. A monthly performance report and applicable Performance Percentage meeting the requirements of Section 4.10 and Section 4.14 must accompany the invoice.

3.7 PROJECT MANAGEMENT

The ITD RWIS Program Manager (PM) will provide oversight for the ITD RWIS Build Out Project. The PM is:

Mr. Bryon Breen
Assistant State Maintenance Engineer
Idaho Transportation Department
PO Box 7129
Boise, ID 83707-1129

Phone: 208.334.8417
E-Mail: bryon.breen@itd.idaho.gov

All invoices for site installation will be sent to the ITD RWIS PM for approval. All monthly invoices for maintenance and operation must be sent to the ITD RWIS PM for approval.

3.8 CONTRACT MANAGEMENT

ITD will assign a contract manager after the contract is awarded.

4.0 REQUIREMENTS & SPECIFICATIONS

The following technical requirements and specifications are developed to govern the installation, integration, communication and testing of devices and support technologies used to measure, observe, and report, weather and pavement surface condition data, as elements of the ITD RWIS Network.

Respondents must provide a response to each requirement noted below.

4.1 NON-PROPRIETARY RWIS NETWORK DESIGN

ITD requires a RWIS network, including all field equipment, communications and data integration systems that is of a non-proprietary design. As such, all RWIS network elements must be designed and configured so that system operation and maintenance is independent of the SI, and can be migrated to ITD, or a third party designee, if circumstances dictate.

Vendor Response

Respondents must provide a statement regarding their intent to provide a RWIS system designed in a manner that meets ITD's non-proprietary design requirement.

Note: Where applicable, discussions of specific non-proprietary design considerations are noted in the following requirements.

4.2 RWIS SITE WEATHER & PAVEMENT OBSERVATIONS

ITD requires that specific weather and pavement condition observations be made at each RWIS site. Data gathered from these observations are processed and quality checked by the SI. The data are then provided to ITD and displayed by the ITD RWIDS system.

The following tables detail the measurement specifications, data classification and survivability requirements for all sensors and related field equipment providing observations and installed at the RWIS site. Not all sites will require all measurements.

Data Specifications

Measurement	Sampling Frequency	Operating Range	Resolution	Accuracy
Air Temperature	2 sec	-40°F to +140°F	0.2°F	±0.5°F
Relative Humidity	2 sec	1% to 100%	1%	± 2 % for 0 to 90%, ± 3% over 90 to 100%
Precipitation Rate	1 min	<u>Rain</u> 0.01 in/h to 12 in/hr <u>Snow</u> 0.01 to 12 in/hr (rainfall equivalent)	<u>Rain</u> 0.01 in <u>Snow</u> 0.004 in (rainfall equivalent)	<u>Rain</u> ± 5% <u>Snow</u> ±10%
Precipitation Accumulation	1 min	<u>Rain</u> 0.01 in to 39.4 in <u>Snow</u> 0.01 to 39.4 in (rainfall equivalent)	<u>Rain</u> 0.01 in <u>Snow</u> 0.01 in (rainfall equivalent)	<u>Rain</u> ± 5% <u>Snow</u> ± 10%
Wind Speed	2 sec 2 min avg.	1 to 120 mph	1 mph	±2%
Wind Direction	2 sec 2 min avg	1° to 360 ° from true North	1°	± 5° greater than 8.2 ft/s
Visibility	5 sec	32 to 6,500 feet	1.0 feet	15% RMSE
Solar Radiation	2 sec	0 to 1500 W/m ²	1 W/m ²	± 5% of daily total
Sub grade Temperature	5 sec	-40°F to +122°F	0.2°F	±0.5°F
Pavement Temperature	5 sec	-31°F to +68°F	0.2°F	±0.5°F
Pavement Freeze Point Temperature	5 sec	-40°F to +150°F	0.2°F	±0.5°F
Barometric Pressure	5 sec	18 – 31 in of Hg	0.03 in Hg	±0.12 in Hg for -4°F to +140°F

Data Classifications

Rain Intensity	Rate-of-fall in 6-minutes	Rate-of-fall in one hour
Light	< 0.01 inch	≤ 0.10 inch
Moderate	0.01 to 0.03 inches	0.11 to 0.30 inches
Heavy	> 0.03 inches	> 0.30 inch

Snow or Drizzle Intensity	Criteria
Light	Visibility > 2640 ft
Moderate	1320 ft < Visibility ≤ 2640 ft
Heavy	Visibility ≤ 1320 ft

Survivability

All field equipment shall meet the following survivability requirements:

Equipment	Survivability Requirement
Meteorological instruments	Environmental: -31°F to +131°F
Wind speed	Survivability: 134 mph wind speed
Field based processors, communication equipment, cameras, and power sources	Environmental: -31°F to +131°F, 0 to 100% RH non-condensing
In-pavement sensors	Environmental: -31°F to +185°F, thermally similar to pavement at location
Tower	Survivability: 100 mph wind speed, with a gust ratio of 1.3. Fifteen-foot snow depths. Environmental: -31°F to +131°F

Vendor Response

Respondents must address each measurement, classification and survivability item in the tables above, and describe a proposed method for making each of the required measurements and classifications. (For example, sensor(s) or algorithms.) Respondents must address how their proposed methods will not preclude other sensors or equipment from being added and swapped out. Respondents must include their rationale regarding why the proposed method is the most optimal for ITD. Note that ITD requires solutions that effectively balance initial costs, technical risk, and life-cycle costs. References provided per Section 5.2 must have experience with the vendor's equipment, installed in the field.

Place specification sheets for all proposed sensors into a separate Specifications binder.

4.3 ITD RWIS SITE IMAGING REQUIREMENTS

ITD requires that the RWIS sites provide images of the site area during all lighting conditions, including nighttime. Required RWIS imaging capabilities are specified in Attachment C.

Vendor Response

Respondents must propose an imaging solution, which meets the capabilities listed in Attachment C. ITD will entertain innovative imaging technologies and use of external illumination at the site. Respondents must include their rationale regarding why the proposed method is the most optimal for ITD. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs.

4.4 FIELD PROCESSING REQUIREMENTS

ITD requires the vendor to provide all necessary field systems required to capture RWIS data and package the information for transmission to the central server. Such field systems shall be configured in a non-proprietary manner as to allow for additional sensors and equipment to be installed without the need for customized software or hardware.

Configuration / Control

The field systems shall allow for configuration control and troubleshooting of RWIS equipment, either through a local onsite connection, or, through a remote connection to the field system from a central facility. ITD shall be provided with a paid-up, perpetual statewide, exclusive, and irrevocable license for any configuration / control software used for its RWIS network.

NTCIP Compliance

ITD requires that all signal processing, measurement analysis, video-capture, transmission, and other data processing performed to meet observation or integration requirements shall be NTCIP compliant. (See Section 4.7 for further discussion of NTCIP requirements).

Sampling Intervals

Data transmission from the field system to the central server shall occur at user-configurable sampling intervals of not greater than every 15 minutes. The transmissions shall include all information collected since the last transmission.

Local Alarms

The RWIS field system shall have the capability of generating alerts, watches, or warnings. These alarms will have the capability of driving a relay emulating a dry switch closure at the site. The SI will provide documentation of the parameters and/or logic of any alerts, watches, or warnings generated by the RWIS site.

Vendor Response

Respondents must describe how their proposed field system solution satisfies each of the requirements above, as well as any additional features the respondent believes are important. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs.

Place specification sheets for the proposed field system(s) into a separate Specifications binder.

4.5 CONSTRUCTION REQUIREMENTS

ITD requires that the RWIS sites contain a minimum of the following items, each meeting the requirements and specifications described herein:

- Freestanding tower, cabinet or roadside structure(s), as required.
- Necessary utilities and electronic equipment to operate instruments and process data.
- Necessary communications equipment to transmit data to the central server
- Necessary software.
- Installation, testing software and system documentation.
- Testing and diagnostic equipment for ITD first line maintenance⁵.
- Training materials and other documentation.
- Warranty.

The SI shall install the RWIS site in accordance with the plans, submitted by the SI, and approved by ITD, as part of the deliverables specified in Section 3.4, and, applicable RWIS component manufacturer's recommendations, FHWA Road Weather Information System Environmental Sensor Station Siting Guidelines⁶ and all federal, state and local codes and requirements.

Any cabinet utilized with the RWIS site shall be a National Electrical Manufacturers Association (NEMA) Type 4 cabinet of stainless steel, aluminum, or fiberglass that is securable by padlock. Any necessary towers shall be

⁵ See Attachment E, ITD RWIS First Line Maintenance Functions

⁶ Publication No. FHWA-HOP-05-026 (<http://ops.fhwa.dot.gov/publications/ess05/>)

designed for installation on a concrete footing. If a tower is proposed, the tower shall be made of low-conducting metal and a fold-over design. If a pole is proposed, the pole shall be telescoping to provide for ground-level maintenance. Fencing shall be chain link conforming to ITD Standard Specification 708.13⁷.

All electrical equipment and materials shall conform to the latest standard of the Underwriter's Laboratories, Inc. In addition to the requirements of the plans, specifications, and special provisions, all material and workmanship shall conform to the most current version of the National Electric Code. The SI shall make all electrical connections from the power sources to RWIS components, in accordance to all state and local electrical codes.

The SI will be responsible for providing all traffic control and safety for work zones. Design and use of Traffic control devices shall conform to the Manual on Uniform Traffic Control Devices⁸, as adopted by the state. Prior to any fieldwork within the Highway Right of Way, the SI shall submit a Traffic Control Plan to the District Traffic Engineer⁹ for approval. A separate Traffic Control Plan is required for each construction site.

Vendor Response

Respondents must describe their overall plans for accomplishing construction of the Year 1 and Year 2 sites listed in Attachment A including plans for mobilizing resources to meet Year 1 and Year 2 schedule requirements. Respondents must include a set of standard drawings showing standard construction and mechanical design for the RWIS site, including foundation, tower, roadside structures and fencing. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs. ITD encourages innovative designs, which meet operational requirements and enhance maintainability.

4.6 POWER REQUIREMENTS

Each RWIS site must be supplied with adequate power to meet site instrument design requirements. The power may be AC or DC, as required by each specific site. DC / solar power supply for any installation shall provide at a minimum 96 hours of continuous operation. The SI shall arrange for establishment of utility connections and supply any hardware necessary for communication with the central server. All circuitry of the RWIS site, the voltage inputs, the sensor inputs, and the communications ports shall be designed and tested to provide transient and surge protection.

⁷ http://www.itd.idaho.gov/manuals/Online_Manuals/Spec_03/index.htm

⁸ <http://www.itd.idaho.gov/manuals/ManualsOnline.htm>

⁹ A listing of District Engineers is available at: <http://www.itd.idaho.gov/aboutITD/phonelst.htm>

In any circumstance where it is not clear which power alternative is the most cost effective or reliable between the central server and the RWIS site, the SI is encouraged to submit a proposal recommending an optimal power method alternative. This proposal shall include an analysis of the relative costs for each feasible alternative, including:

- Initial capital costs per unit
- Long term operation and maintenance costs per unit
- An analysis of the advantages and disadvantages

ITD will select the power alternative based primarily on the proposal, analyses, and cost information. Any utility connections will be established on ITD's behalf with recurring electricity usage the responsibility of ITD.

Vendor Response

Respondents must discuss their strategy for identifying the most cost effective approach to providing power and communications to the RWIS site locations detailed in Attachment A. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs.

4.7 NTCIP COMPLIANCE REQUIREMENTS

The completed RWIS network, including all components and software, shall be in compliance with the most current National Transportation Communications for Intelligent Transportation Systems Protocol (NTCIP) ESS standards¹⁰, and, must remain compliant throughout the contract period.

The ESS shall conform to NTCIP 1201

The ESS shall support the Configuration Conformance Group as defined in NTCIP 1201.

The ESS shall support the Time Management Conformance Group as defined in NTCIP 1201.

The ESS shall conform to NTCIP 1204.

The ESS shall support the ESS Configuration Conformance Group as defined in NTCIP 1204.

The ESS shall support the ESS Location Conformance Group as defined in NTCIP 1204.

¹⁰ <http://www.ntcip.org/>

The ESS shall support the Pressure Conformance Group as defined in NTCIP 1204.

The ESS shall support the Wind Data Conformance Group as defined in NTCIP 1204.

The ESS shall support the Basic Temperature Data Conformance Group as defined in NTCIP 1204.

The ESS shall support the `essAirTemperature`, `essRelativeHumidity`, `essDewpointTemp` and `essWetBulbTemp` object definitions as defined within the Enhanced Temperature Data Conformance Group found in NTCIP 1204.

The ESS shall support the Standard Precipitation Data Conformance Group and the `essPrecipSituation` object definition as defined within the Emerging Precipitation Data Conformance Group found in NTCIP 1204.

The ESS shall support the Solar Radiation Conformance Group as defined in NTCIP 1204.

The ESS shall support the Visibility Data Conformance Group as defined in NTCIP 1204.

The ESS shall support the Enhanced Pavement Sensor Data Conformance Group as defined in NTCIP 1204.

The ESS shall support the Standard Sub-Surface Sensor Data Conformance Group as defined in NTCIP 1204.

In lieu of support for the full ranges of the object definitions as defined in NTCIP 1201 and NTCIP 1204, the vendor is permitted to include only necessary ranges for which climatic and system responses can be obtained. These ranges shall be permitted only with the consent of ITD and shall not deviate from the prescribed data format defined within the referenced standards. The vendor must provide justification for each modified range. Such modifications shall be noted as an exception to the original proposal. For example, the range for the air temperature object is from -100 to +100 degrees centigrade. A more suitable option of supporting a range from -50 to +70 degrees centigrade may be considered and permitted. In an attempt to reduce development costs, the vendor may present these types of alternative subset ranges to ITD.

The SI shall be required to fully integrate with current ITD systems that use the NTCIP protocols, such as the ITD Dynamic Message Sign Network. The SI will be provided with information necessary to ensure compliance and compatibility with the existing systems.

NCTIP compliance testing will be an element of Final Acceptance Testing as described in Section 4.9, RWIS Site Commissioning Requirements.

Vendor Response

Respondents must detail their current NTCIP compliance levels, by referencing the ITS standards noted above, and affirming that all equipment is compliant, or, noting any equipment non-compliance by equipment. Include an estimated date when any non-compliant equipment will become compliant. Respondents should also describe their strategy for maintaining compliance with any future changes to the NTCIP standards.

4.8 DATA COMMUNICATION AND INTEGRATION REQUIREMENTS

ITD requires a data communication and integration system, which is designed to be robust and non-proprietary. Such a design must allow for the communication and integration system to be operated by ITD or a third party designee. Data provided by RWIS devices will ultimately reside on ITD's RWIDS for use by a variety of information consumers. All software and data interfaces supplied by the SI must be designed to reflect the latest NTCIP and Traffic Management Data Dictionary Standards¹¹. All data exchanges between field equipment, the central server, and RWIDS server shall utilize and comply with all applicable NTCIP/ESS standards for data communications. The data must be formatted to be compatible with the Attachment D, ITD Data Integration Specification.

The hosted central server will be utilized to regularly poll the RWIS sites, process incoming data and provide the data to RWIDS. The central server will also provide intermediary data storage. The central server will poll each RWIS site at an ITD, user defined, interval no longer than every 15 minutes to transfer and refresh its data. All data collected must be made available to the RWIDS no later than seven (7) minutes after the RWIS site is polled.

ITD shall own all data generated through the RWIS system. This includes the ability to directly import real time data from the RWIS site, from the RWIS software, or from an Internet web page utilizing an open protocol, to RWIDS. Use of any data generated by the RWIS system, without the express written permission of ITD, is prohibited.

All software developed for obtaining information from the RWIS network and processing the information for delivery to the RWIDS database shall be the property of ITD. ITD shall be provided with a paid-up, perpetual statewide, exclusive, and irrevocable license for any software developed for obtaining and processing RWIS information for delivery to RWIDS.

¹¹ <http://www.ite.org/tmdd/>

Vendor Response

Respondents must provide an overall communication strategy for linking the ITD RWIS sites to the central server. In any circumstance where it is not clear which communication alternative is the most cost effective or reliable between the central server and the RWIS site, the SI is encouraged to submit a proposal recommending an optimal communications method alternative. This proposal shall include an analysis of the relative costs for each feasible alternative, including:

- Initial capital costs per unit
- Long term operation and maintenance costs per unit
- An analysis of the advantages and disadvantages

The proposal and analysis shall include all required equipment necessary to facilitate data exchange from the RWIS site to the RWIDS Server. ITD will select the communication alternative based primarily on the proposal, analyses, and cost information. Note that ITD will rate responses based upon the degree of innovation shown in proposed solutions that effectively balance initial costs, technical risk, and life-cycle costs. Any utility connections will be established on ITD's behalf with recurring electricity usage the responsibility of ITD.

Respondents must also provide a data capture and integration plan detailing:

- ✓ A statement that the SI understands and acknowledges that all RWIS data is owned by ITD.
- ✓ Plans for providing a robust, non-proprietary system that could be operated independently from the SI.
- ✓ High-Level Description of the RWIS Information Gathering and Processing System
- ✓ Diagram of the System Architecture and Information Flow
- ✓ Central Server Hardware and Software Configuration
- ✓ Overview of Required Software Development (Middleware needed to convert field data to match data requirements specified in Attachment D, ITD Data Integration Specification.)
- ✓ Plans for maintaining all software designed to support the ITD network.
- ✓ Data Center specifications including security and data protection plans.
- ✓ RWIS Site Communication Strategies
- ✓ Provision of Historical Data Archive Capability (Ability to provide archival RWIS data files to ITD on an annual or semi-annual basis.)

4.9 RWIS SITE COMMISSIONING REQUIREMENTS

ITD requires that each installed site be thoroughly tested in start-up and operational modes prior to acceptance of the site. All RWIS equipment supplied on this project shall be tested in accordance with:

Factory Acceptance Testing

Provide manufacturer's calibration and certification specifications covering all RWIS equipment supplied.

Start-Up Component Testing

On site testing which insures that each individual device operates independently and in an integrated fashion. This includes verification of data integration from the RWIS site to the RWIDS system.

Final System Acceptance Testing

Testing which insures that the RWIS site provides data to RWIDS, which meets a Performance Percentage of 100%, as defined in Section 4.10, and that all field systems are NTCIP compliant. NTCIP compliance testing will be accomplished by ITD, from ITD Headquarters. The final acceptance test period shall commence at the conclusion of successful Start-Up Component testing and shall continue for a period of 30 days. The RWIS site must demonstrate a Performance Percentage of no less than 100% during the test period. If the Performance Percentage is less than 100%, the test must be repeated, at the option of ITD.

All test results and test reports (whether satisfactory or otherwise) shall be made available to ITD within 24 hours of testing completion. A written statement shall accompany satisfactory test results from an officer of the SI stating that the system is performing in accordance with the contract requirements. If the equipment or systems fail any part of the test, the entire test shall be repeated at the option of ITD. The SI shall furnish all test equipment and services. Neither witnessing of the tests by ITD nor the waiving of the right to do so shall relieve the SI of the responsibility to furnish and install the work in accordance with the contract documents. The contract period shall not be extended for time loss or delays related to testing. The cost for testing shall be considered as part of the unit cost for the item tested and no direct payment shall be made.

Vendor Response

Respondents must provide written test plans that encompass Factory Acceptance, Start-Up Component and Final System Acceptance as noted above.

4.10 RWIS DATA DELIVERY, DATA QUALITY REQUIREMENTS

ITD requires timely delivery of quality data from the RWIS network. It is expected that the SI will maintain internal, automated procedures for monitoring the RWIS network in order to identify non-responsive sites, defective sensors and data quality issues. Data delivery and quality will be measured by comparing actual total observations from the ITD RWIS network, compared against expected total observations for a month and arriving at a Performance Percentage.

Expected Observations = Total number of observations available from the network, times the number of data polling calls scheduled for the measurement timeframe.

Actual Observations = Expected Observations minus exceptions. Exceptions include polling events where there is no connection, no data readings, null or out-of-range readings or, inaccurate data.

Performance Percentage = Actual Observations divided by Expected Observations times 100.

The Performance Percentage will be reported monthly and submitted with the maintenance and operation invoice. The Performance Percentage will be used to determine payments for monthly maintenance and operation invoices, based upon the following table:

Performance Percentage	Payment Terms
97 to 100%	105% of monthly fee
94 to < 97	100% of monthly fee
90 to <94	95% of monthly fee
80 to <90	85% of monthly fee
70 to <80	75% of monthly fee
< 70	65% of monthly fee & Review of Contract for Cancellation

Vendor Response

Respondents must describe their automated data quality control site monitoring processes, which will be applied to the ITD RWIS network. A copy of the SI's Quality Assurance Plan and site monitoring procedures should be included in this section. These documents must include a description of automated procedures for alerting the SI project managers of trouble within the ITD RWIS network due to individual data quality issues, sensor failures, site communication failures, and other network anomalies.

4.11 DOCUMENTATION REQUIREMENTS

ITD requires full documentation for each site, including: as built drawings of the installation, communication architecture, utility information, operation and software manuals, manufacturer specifications and other information. The SI shall also supply at least one (1) Operation and Service (O&S) Manual for each RWIS site installed under this contract. At a minimum the O&S manual will contain adequate detail to provide step by step instruction on the proper annual

preventive maintenance techniques, trouble shooting common problems, and basic repair and replacement techniques.

Vendor Response

Respondents must describe their plans for providing documentation, as described above, plus samples of Operations Manuals, User's Manuals and other system documentation used in current SI RWIS installations.

4.12 TRAINING REQUIREMENTS

ITD requires field training of personnel responsible for "first line" maintenance activities on the RWIS. Training shall include hands on description of the configuration and operation of the RWIS system(s) for students in each of the six ITD Districts, and training manuals.

Training must be geared towards individuals who are skilled in electronics and have responsibility for first line maintenance of the RWIS field sites and communications infrastructure. An overview of the system shall include discussion of the following:

- Theory of operation
- Isolation of faults to board level
- Hands-on troubleshooting
- Calibration and use of calibration equipment
- Programming and configuration techniques
- Communications troubleshooting
- Performing routine testing of the system
- Analysis of logs and failure alarms

Vendor Response

Respondents must provide examples of training materials and plans, used previously, and describe their plans for providing training within each ITD district, noted below:

ITD District Addresses	
DISTRICT 1 600 W. Prairie Coeur d'Alene 83815-8764 (208) 772-1200	DISTRICT 2 2600 Frontage Road P.O. Box 837 Lewiston 83501-0837 (208) 799-5090
DISTRICT 3 8150 Chinden Boulevard P.O. Box 8028 Boise 83707-2028 (208) 334-8300	DISTRICT 4 216 So. Date Street P.O. Box 2-A Shoshone 83352-0820 (208) 886-7800
DISTRICT 5 5151 South 5th P.O. Box 4700 Pocatello 83205-4700 (208) 239-3300	DISTRICT 6 206 North Yellowstone Highway P.O. Box 97 Rigby 83442-0097 (208) 745-7781

4.13 MAINTENANCE AND OPERATIONS REQUIREMENTS

ITD requires maintenance and operation of the ITD RWIS Network for a period of 3 years with the option to renew for two additional 2-year periods. (Note: ITD will be responsible for First Line preventative maintenance items. See Attachment E.) The following major activities are encompassed by this requirement:

Operation of Network

This includes all activities required to keep the entire SI RWIS network (all software and hardware related to; sensors, facilities, utilities, data transmission, central processing, administration) in a fully operational status, achieving a Performance Percentage of 100%.

Non First Line Maintenance of RWIS Site Equipment

This includes routine maintenance of all sensors, power and communication equipment located at each RWIS site. This includes replacement of any equipment under warranty. (See section 4.15.)

Maintenance of RWIS Facilities

This includes maintenance of all structures and access areas located at each RWIS site. This includes replacement of any equipment under warranty. (See section 4.15.)

Maintenance of Data Integration Network

This includes maintenance of all software and hardware related to the central server, encompassing polling and data processing activities for the RWIDS system. This includes replacement of any equipment under warranty. (See Section 4.15.) This also includes necessary software and hardware updates required to maintain system-wide compliance with the most recent version of applicable NTCIP protocols.

Measurement and Reporting of System Performance

This includes maintenance of systems related to continuous monitoring and reporting of SI RWIS system performance.

Documentation and Training Materials

This includes updating all system documentation and training materials to reflect current SI RWIS system configuration.

In addition to maintenance, ITD requires that both field and central server technology be periodically evaluated and refreshed to take advantage of technological innovation, where applicable. At minimum, an annual technical assessment of the ITD RWIS Network, noted as a deliverable in Section 3.4, should be provided. The assessment should discuss recommendations for application of new sensor and communication technologies.

When the SI provides service personnel for on-site Maintenance ITD will provide, at its own expense:

- Reasonable access to the Equipment as requested by the service personnel.
- Adequate working space and facilities for the service personnel, located within a reasonable distance from the defective Equipment.
- Other reasonable information and assistance as requested by the service personnel.

Recurring site electricity and site communication connection costs, excluding long distance charges, will be the total responsibility of ITD.

For purposes of reporting and payment, RWIS site "down time" is defined as any time that the site is non-operational, fails to produce the required observations, or produces inaccurate data when the site is polled. Such down time will have a negative impact on the SI's Performance Percentage. (Reference Section 4.10.)

Down time due to non-warranty causes, such as road maintenance, vandalism, natural disasters, theft, or accidents must be reported immediately to ITD. The SI shall provide a written estimate of the cost of repairs to ITD. ITD may request more information and/or initiate its own investigation to determine the cause of the damage or equipment loss. In the event of the discovery of damage due to theft, vandalism or accident, the SI shall also provide a police report.

Site down time resulting from non-warranty causes will not be counted against the SI's Performance Percentage, as long as repairs are made within the Level 1 and Level 2 Response Timeframes noted below. However, if repairs are not made within the designated response timeframe, the down time will be counted against the SI's Performance Percentage and liquidated damages may be charged to the SI.

Emergency Response

It shall be the responsibility of the SI to monitor each site for proper operation and data collection at all times. In the event of any problem identification, the SI must notify ITD within 24-hours of detection. In some cases, ITD may notify the SI with problem identification. The SI shall respond as follows;

Level 1 Response Timeframe: October 15 – April 15.

Maintenance support to correct warranted deficiencies will be provided within 48 hours of notification of a problem, weather conditions permitting.

The SI will provide ITD with a material list and cost estimate to complete repairs, if the failure is due to a non-warranty cause. Maintenance support to correct the non-warranted deficiencies will be provided within 48 hours of ITD approval to proceed with repairs.

Level 2 Response Timeframe: April 16 – October 14.

Maintenance support to correct warranted deficiencies will be provided within 96 hours of notification of a problem, weather conditions permitting.

The SI will provide ITD with a material list and cost estimate to complete repairs, if the failure is due to a non-warranty cause. Maintenance support to correct the non-warranted deficiencies will be provided within 96 hours of ITD approval to proceed with repairs.

Liquidated Damages

Once the SI has been notified, or when the SI has identified a problem, the SI will initiate repairs within timeframes listed above or will sustain a five hundred dollars (\$500.00) per day maintenance service liquidated damage. Damages will be calculated reflective of each day, in excess of the response timeframes noted above, without response or support, and will be deducted from the monthly maintenance and operation invoice total, by the ITD.

Vendor Response

Respondents will describe plans for maintaining and operating the ITD Network, in compliance with the requirements noted above. Respondents should also include discussions regarding plans to refresh ITD RWIS Network technology, where applicable. Copies of proposed preventative maintenance plans are appropriate.

4.14 REPORTING REQUIREMENTS

ITD requires that monthly reports on the status of the ITD RWIS network be provided with monthly maintenance and operation invoices. The monthly maintenance and operation report will include detailed performance percentages for each site and the calculated system Performance Percentage for the Month, (see Section 4.10), and a Site Status Sheet. The Site Status Sheet should show the operational status of each site installed and maintained under this contract, broken down by ITD district. In cases where a site is not fully operational, the sheet should show the date that problem was initially reported, detail the deficiencies / problems and the schedule for correction of deficiencies.

Vendor Response

Respondents must describe their plans to establish a monthly reporting process including; an overview of the method of calculation of the Performance Percentage described in Section 4.10; an example Site Status Sheet, and, a report format demonstrating how the Performance Percentage will correspond with the monthly invoicing.

4.15 WARRANTY REQUIREMENTS

ITD requires that the entire RWIS Network be warranted for the duration of the contract period, or the life of the product, whichever is longer. All products

supplied will be covered by the most favorable commercial warranties given by the SI/manufacturer to any customer for such parts and supplies.

For the term of the Contract, or warranty period, whichever is longer, the SI will replace any materials/parts, equipment or facilities (to include sensors) at its own expense if the materials/parts, equipment or facilities failed due to defects in material and/or workmanship. Replacement costs will not be the responsibility of the SI if the failure is due to:

- Attempts to remove, re-install or change the physical location of a Sensor by ITD or its subcontractor.
- Visible or non-visible damage caused by natural disasters including, but not limited to, shifting of the earth, flood or fire. Lightning strikes/power surges are not included, as the SI is expected to use sufficient surge protection to prevent damage from occurring. Replacement costs due to lightning strikes/power surges will be the responsibility of the SI.
- Visible or non-visible damage caused by acts, accidental or intentional, of man or machinery, except damage caused by the SI or its employees.
- Failure of ITD to properly maintain the pavement in which a Sensor is installed including, but not limited to, repairing cracks around a Sensor and roadway projects which damage sensors.
- Theft, vandalism or damage due to accident. In the event of the discovery damage due to theft, vandalism or damage due to accident, the SI shall provide a police report and ITD must be notified as soon as possible.

All materials, services and equipment including, personnel, tools, testing equipment, vehicles, and any other required site equipment must be provided by the SI. This includes, but is not limited to, road sensors, electronics, batteries, solar panels, lightning arrestors, cabinets, conduit, wiring, etc. The SI may select any subcontractor necessary to satisfy the requirements of this contract. However, the SI will be responsible for warranty for all equipment per the terms of this contract.

Vendor Response

Respondents will provide a warranty statement affirming that they understand and accept ITD's warranty requirements.

4.16 PROJECT MANAGEMENT PLAN

ITD requires that a project management plan (PMP) be used to guide the scope, schedule and budget of the ITD RWIS Build-Out Project. Upon award, the System Integrator will finalize the PMP and submit to ITD for approval.

Vendor Response

Respondents should provide:

- A preliminary PMP including a detailed work breakdown structure showing key tasks, resource requirements and estimated lead times.
- A description of internal methods and procedures used to plan, coordinate, direct and control the project.
- A description of methods and procedures used to regularly communicate project status, outstanding issues and problem resolution to the PM.
- A description of risk mitigation processes and procedures employed by the SI.

5.0 SYSTEM INTEGRATOR SPECIFICATIONS

5.1 SYSTEM INTEGRATOR ORGANIZATION

ITD requires a SI structured in a manner to promote successful completion of the ITD RWIS Build Out Project.

Vendor Response

Respondents must provide an overview of their company and a project organizational structure. The project organization structure should clearly identify areas of responsibility and identify the SI's project manager. The project manager will be the SI's single point of contact for the ITD RWIS Build-Out project.

Respondents must identify any subcontractors and describe the subcontractors' areas of responsibility.

5.2 QUALIFICATION, EXPERIENCE AND REFERENCES

ITD requires a SI with qualifications and demonstrated experience to ensure successful completion of the ITD RWIS Build Out Project.

Vendor Response

Respondents must provide a summary of three projects that demonstrate experience with projects of similar scope and duration as the ITD RWIS Build Out. Specifically, this needs to entail both installation, and maintenance / operation contracts for state or federal agencies, municipalities, or other public sector organizations. The summary descriptions must include:

- Name of Agency
- Summary Description of Contract
- Scope of Contract (Number of sites installed / managed.)
- Duration of Contract
- Current Status of Contract
- Contact Name
- Contact Address
- Contact Phone Number
- Contact E-Mail Address

5.3 FINANCIALS

Respondents must provide evidence of financial stability and capability to fund all costs associated with providing the services throughout the term of the Contract.

This information will be used in the RFP evaluation process, so ensure completeness and accuracy when providing this information.

NOTE: For publicly traded companies, provide copies of your SEC form 10K for years 2004 and 2005. Only one (1) copy of your SEC from 10K is necessary. For privately held entities responding to this RFP, financial information is Mandatory and failure to provide it will cause the response to be deemed non-responsive. In lieu of a SEC form 10K, privately held companies must submit a consolidated financial statement that includes the following information. If audited financial data is not available, explain in full and provided the latest non-audited information. Numbers must be in United States Dollars.

All date elements must be filled in and accounted for. For example, if the company has no interest payable, then indicate with a zero (0). Do not leave any item blank. You must use the form below if you do not submit SEC 10k's.

CONSOLIDATED BALANCE SHEET

ASSETS

CURRENT ASSETS	<u>2003</u>	<u>2004</u>
Cash	_____	_____
Receivable, net	_____	_____
Inventories	_____	_____
Prepaid Expenses	_____	_____
Total Current Assets	_____	_____
 FIXED ASSETS	 <u>2003</u>	 <u>2004</u>
Net	_____	_____

LIABILITIES AND SHAREHOLDERS' (OWNERS') EQUITY

CURRENT LIABILITIES	<u>2003</u>	<u>2004</u>
Accounts Payable	_____	_____
Income Tax Payable	_____	_____
Interest Payable	_____	_____
Current Portion of Long Term Debt	_____	_____
Total Current Liabilities	_____	_____
 LONG-TERM DEBT	 <u>2003</u>	 <u>2004</u>
Bonds Payable	_____	_____
 SHAREHOLDERS' (OWNERS) EQUITY	 <u>2003</u>	 <u>2004</u>
Common Stock	_____	_____
(\$1.00 par value)	_____	_____
Retained Earnings	_____	_____
Total Shareholders' (owners') Equity	_____	_____
Total Liabilities & Shareholders' Equity	_____	_____

5.4 CONTRACT MANAGEMENT

Provide mailing address, telephone, facsimile and e-mail information for the SI Project Manager and the SI's contracts administration department.

5.5 BONDING AND INSURANCE

If awarded a contract, the SI must post a performance and payment bond in an amount equal to, or greater than, 85% of the total proposal cost. Reference ITD Standard Specifications, sections 103.04 and 103.05.¹²

¹² http://www.itd.idaho.gov/manuals/Online_Manuals/Spec_03/index.htm

6.0 RESPONSE SPECIFICATIONS

6.1 PROPOSAL SUBMISSION

Bid proposals must be received by **5:00 P.M. (Mountain Time) May 11, 2006**. No electronic submissions will be allowed. All bid submissions must be manual. Proposals must be sealed. All proposals will be date and time stamped upon arrival at the ITD Purchasing Section and stored in a secure place until bid opening time. The mailing and hand delivery addresses are:

Idaho Transportation Department
Business and Support Management
Purchasing Section
3311 West State
Boise, Idaho 83703

P.O. Box 83720
Boise, ID 83720-0075

Late Proposals. Proposals received after the deadline will not be accepted.

Bid Opening. Sealed proposals will be opened publicly the day after the bid closing date at 10:30AM. Only the names of the bidders will be identified at the public bid opening.

6.2 BIDDER QUESTIONS AND ITD RESPONSE

ITD staff will not respond to telephone inquiries or visitations by bidders or their representatives regarding the technical aspects of the RFP. However, bidders may submit written, faxed, or e-mailed inquiries and questions received on or before 5:00 P.M. ten (10) working days from the date of release of the RFP. Written questions regarding the RFP, Terms and Conditions, or the Standard Contract should be submitted to:

Tina Klamt at Tina.Klamt@itd.idaho.gov

Or by mail to:

ITD Purchasing Section
P.O. Box 7129
Boise, Idaho 83707-1129
Attention: Tina Klamt

Questions submitted by facsimile should be FAXED to ITD Purchasing Section at 208-334-8824 Attention: Tina Klamt. A written response to the inquiries will be prepared and posted on the ITD Web site and mailed to all interested bidders.

6.3 RESPONSE FORMAT

These instructions prescribe the format that proposals must follow and describe the approach for the development and presentation of proposal data. They are designed to ensure a complete submission of information necessary for an equitable analysis and evaluation of submitted proposals. There is no intent to limit the content of proposals beyond the page limitation for the Business/Technical proposal noted below. The proposal (including the "Technical/ Business" section) of the successful respondent shall be appended to and incorporated in the Contract. Each prospective respondent should review the terms and conditions set forth in the Contract carefully since compliance with those terms and conditions shall be mandatory.

The proposal shall be submitted at the same time, in two (2) distinct, sections: a Business/Technical proposal and a Cost proposal.

The Cost Proposal section must be placed in a separate sealed envelope annotated "Cost Proposal" and marked "Confidential Cost Proposal."

The Business/Technical Proposal must be placed in a separate sealed envelope annotated "Business and Technical Portion of Proposal."

Bidders must furnish all information requested in the Business/Technical and Cost Sections.

Submit one (1) original and 5 copies of the Business/Technical Proposal.

Submit one (1) original of the Cost Proposal.

The Business/Technical Proposal must be limited to no greater than 100 pages.

Proposals are to be prepared on standard 8 1/2" x 11" paper. Foldouts containing charts, spreadsheets, and oversize exhibits are permissible. The pages should be placed in a binder with tabs separating the sections of the proposal. Manuals and other reference documentation may be bound separately. All responses, as well as any reference material presented must be written in English.

Proposals must respond to the RFP requirements by restating the number and text of the requirement in sequence and writing the response immediately after the requirement statement.

This RFP is available in electronic format Microsoft® Word 6 upon request to the State.

Figures and tables must be numbered and referenced in the text by that number. They should be placed as close as possible to the referencing text. Pages must be numbered consecutively within each section of the proposal showing proposal section number and page number.

Proposals shall be based only on the material contained in this RFP. The RFP includes official responses to pre-proposal conference questions, addenda, and other material published by the State pursuant to the RFP. The vendor is to disregard any previous draft material and any oral representations it may have received. All responses must clearly state whether the proposal will satisfy the referenced requirements, and the manner in which the requirement will be satisfied.

Respondents must complete, sign and submit Attachment F, Signature Page.

6.4 PROPOSAL FORMAT AND CONTENT

Response to Work Described: Each portion of the work described in this RFP has an evaluation code assigned as follows:

(M) Mandatory Specification – failure to comply with any mandatory specification will render Bidder's proposal non-responsive and no further evaluation will occur. Bidder is required to respond to this specification with a statement outlining its understanding and how it will comply. No points will be awarded.

(E) Evaluated Specification – a response is desired. If not available, respond with "Not Available" or other response that identifies Bidder's ability or inability to supply the item or service. Failure to respond will result in zero points awarded for this item.

(ME) Mandatory and Evaluated Specification – failure to comply will render Bidder's proposal non-responsive and no further evaluation will occur. Bidder is required to respond to this specification with a statement outlining its understanding and how it will comply.

Points will be awarded based on predetermined criteria.

Executive Summary (M)

Provide an Executive Summary of the Vendor's response to this Request for Proposal, including an overview of the Vendor's solution and the name, address, phone, and fax number of the contact person to whom questions should be addressed concerning the Vendor's proposal. All subcontractors must be listed.

Financial and Organizational Information (ME)

The bidder shall develop responses to meet requirements in Section 5.0 and address each sub-section as outlined in the following table:

Reference: Section 5, System Integrator Specifications	
Sub-Section	Required Response
5.1	<p>Respondents must provide an overview of their company and a project organizational structure. The project organization structure should clearly identify areas of responsibility and identify the SI's project manager. The project manager will be the SI's single point of contact for the ITD RWIS Build-Out project.</p> <p>Respondents must identify any subcontractors and describe the subcontractors' areas of responsibility.</p>
5.2	<p>Respondents must provide a summary of three projects that demonstrate experience with projects of similar scope and duration as the ITD RWIS Build Out. Specifically, this needs to entail both <u>installation</u>, and, <u>maintenance / operation</u> contracts for state or federal agencies, municipalities, or other public sector organizations. The summary descriptions must include:</p> <ul style="list-style-type: none">• Name of Agency• Summary Description of Contact• Scope of Contract (Number of sites installed / managed.)• Duration of Contract• Current Status of Contract• Contact Name• Contact Address• Contact Phone Number• Contact E-Mail Address
5.3	Per section 5.3.
5.4	Provide mailing address, telephone, facsimile and e-mail information for the SI Project Manager and the SI's contracts administration department.
5.5	If awarded a contract, the SI must post a performance bond in an amount equal to, or greater than, 85% of the total proposal cost. Reference ITD Standard Specifications, sections 103.04 and 103.05. ¹³

Technical Approach (ME)

The bidder shall develop responses to meet requirements in Section 4.0 and address each sub-section as outlined in the following table:

¹³ http://www.itd.idaho.gov/manuals/Online_Manuals/Spec_03/index.htm

Reference: Section 4, Requirements and Specifications	
Sub-Section	Required Response
4.1	<p>Respondents must provide a statement regarding their intent to provide a RWIS system designed in a manner that meets ITD's non-proprietary design requirement.</p> <p>Note: Where applicable, discussions of specific non-proprietary design considerations are noted in the following requirements.</p>
4.2	<p>Respondents must address each measurement, classification and survivability item in the tables above, and describe a proposed method for making each of the required measurements and classifications. (For example, sensor(s) or algorithms.) Respondents must address how their proposed methods will not preclude other sensors or equipment from being added and swapped out. Respondents must include their rationale regarding why the proposed method is the most optimal for ITD. Note that ITD requires solutions that effectively balance initial costs, technical risk, and life-cycle costs. References provided per Section 5.2 must have experience with the vendor's equipment, installed in the field.</p> <p>Place specification sheets for all proposed sensors into a separate Specifications binder.</p>
4.3	<p>Respondents must propose an imaging solution, which meets the capabilities listed in Attachment C. ITD will entertain innovative imaging technologies and use of external illumination at the site. Respondents must include their rationale regarding why the proposed method is the most optimal for ITD. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs.</p>
4.4	<p>Respondents must describe how their proposed field system solution satisfies each of the requirements above, as well as any additional features the respondent believes are important. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs.</p> <p>Place specification sheets for the proposed field system(s) into a separate Specifications binder.</p>
4.5	<p>Respondents must describe their overall plans for accomplishing construction of the Year 1 and Year 2 sites listed in Attachment A including plans for mobilizing resources to meet Year 1 and Year 2 schedule requirements. Respondents must include a set of standard drawings showing standard construction and mechanical design for the RWIS site, including foundation, tower, roadside structures and fencing. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs. ITD encourages innovative designs, which meet operational requirements and enhance maintainability.</p>
4.6	<p>Respondents must discuss their strategy for identifying the most cost effective approach to providing power and communications to the RWIS site locations detailed in Attachment A. Note that ITD requires solutions that effectively balance initial costs, technical risk, and, life-cycle costs.</p>

Reference: Section 4, Requirements and Specifications	
Sub-Section	Required Response
4.7	<p>Respondents must detail their current NTCIP compliance levels, by referencing the ITS standards noted above, and affirming that all equipment is compliant, or, noting any equipment non-compliance by equipment. Include an estimated date when any non-compliant equipment will become compliant. Respondents should also describe their strategy for maintaining compliance with any future changes to the NTCIP standards.</p>
4.8	<p>Respondents must provide an overall communication strategy for linking the ITD RWIS sites to the central server. In any circumstance where it is not clear which communication alternative is the most cost effective or reliable between the central server and the RWIS site, the SI is encouraged to submit a proposal recommending an optimal communications method alternative. This proposal shall include an analysis of the relative costs for each feasible alternative, including:</p> <ul style="list-style-type: none"> • Initial capital costs per unit • Long term operation and maintenance costs per unit • An analysis of the advantages and disadvantages <p>The proposal and analysis shall include all required equipment necessary to facilitate data exchange from the RWIS site to the RWIDS Server. ITD will select the communication alternative based primarily on the proposal, analyses, and cost information. Note that ITD will rate responses based upon the degree of innovation shown in proposed solutions that effectively balance initial costs, technical risk, and life-cycle costs. Any utility connections will be established on ITD's behalf with recurring electricity usage the responsibility of ITD.</p> <p>Respondents must also provide a data capture and integration plan detailing:</p> <ul style="list-style-type: none"> ✓ A statement that the SI understands and acknowledges that all RWIS data is owned by ITD. ✓ Plans for providing a robust, non-proprietary system that could be operated independently from the SI. ✓ High-Level Description of the RWIS Information Gathering and Processing System ✓ Diagram of the System Architecture and Information Flow ✓ Central Server Hardware and Software Configuration ✓ Overview of Required Software Development (Middleware needed to convert field data to match data requirements specified in Attachment D, ITD Data Integration Specification.) ✓ Plans for maintaining all software designed to support the ITD network. ✓ Data Center specifications including security and data protection plans. ✓ RWIS Site Communication Strategies ✓ Provision of Historical Data Archive Capability (Ability to provide archival RWIS data files to ITD on an annual or semi-annual basis.)
4.9	<p>Respondents must provide written test plans that encompass Factory Acceptance, Start-Up Component and Final System Acceptance as noted above.</p>

Reference: Section 4, Requirements and Specifications	
Sub-Section	Required Response
4.10	Respondents must describe their automated data quality control site monitoring processes, which will be applied to the ITD RWIS network. A copy of the SI's Quality Assurance Plan and site monitoring procedures should be included in this section. These documents must include a description of automated procedures for alerting the SI project managers of trouble within the ITD RWIS network due to individual data quality issues, sensor failures, site communication failures, and other network anomalies.
4.11	Respondents must describe their plans for providing documentation, as described above, plus samples of Operations Manuals, User's Manuals and other system documentation used in current SI RWIS installations.
4.12	Respondents must provide examples of training materials and plans, used previously, and describe their plans for providing training within each ITD district.
4.13	Respondents will describe plans for maintaining and operating the ITD Network, in compliance with the requirements noted above. Respondents should also include discussions regarding plans to refresh ITD RWIS Network technology, where applicable. Copies of proposed preventative maintenance plans are appropriate.
4.14	Respondents must describe their plans to establish a monthly reporting process including; an overview of the method of calculation of the Performance Percentage described in Section 4.10; an example Site Status Sheet, and, a report format demonstrating how the Performance Percentage will correspond with the monthly invoicing.
4.15	Respondents will provide a warranty statement affirming that they understand and accept ITD's warranty requirements.
4.16	<p>Respondents should provide:</p> <ul style="list-style-type: none"> • A preliminary PMP including a detailed work breakdown structure showing key tasks, resource requirements and estimated lead times. • A description of internal methods and procedures used to plan, coordinate, direct and control the project. • A description of methods and procedures used to regularly communicate project status, outstanding issues and problem resolution to the PM. • A description of risk mitigation processes and procedures employed by the SI.

Cost Proposal (ME)

The cost proposal must be submitted in a separately sealed envelope clearly marked "CONFIDENTIAL COST PROPOSAL". The technical and cost proposals may be submitted in the same package.

The cost proposal must detail the following information:

New Site Installation Costs

In a table, formatted as follows, provide new site installation costs, on a per site basis, for construction and installation of each site listed in Attachment A, constructed to meet the requirements of Section 4. Site installation costs must be displayed as a per site, fully burdened cost, representing all labor, overhead and profit. The per site costs must include, but are not limited to the following:

- Mobilization
- Traffic Control
- Grading & Site Preparation
- Utility Connections (Solar Array & Battery Installation, if required.)
- Foundation
- Fencing
- Tower or Pole
- Cabinet
- Other Facilities

New Site Installation Cost Table

New Site Name	New Site Installation Cost
Seasons	\$
Five Mile Hill	\$
Dickensheet	\$
Harvard Hill	\$
Top of Whitebird Hill	\$
Deary	\$
Cottonwood Creek	\$
Concrete Section	\$
Saddle Camp	\$
Shoshone County Line	\$
Kamiah	\$
Elk City	\$
Top of Greer Grade	\$

New Site Name	New Site Installation Cost
Frei Hill	\$
Fort Hall Hill	\$
Horseshoe Bend Hill	\$
Midvale Hill	\$
Highland Valley Summit	\$
Hammett Hill	\$
Little Donner	\$
District 3 Boundary	\$
Top of Summit, ION	\$
Goose Creek Grade	\$
I-84/US-95 Interchange	\$
Juniper Interchange	\$
Heyburn Interchange	\$
Pine Turnoff	\$
Smiley Creek Airport	\$
Timmerman Hill	\$
Kinsey Butte	\$
Gwynn Ranch Hill	\$
Rogerson	\$
Conner Summit	\$
Idahome Interchange	\$
Pocatello (Monte Vista)**	\$
Malad Summit**	\$
Blackfoot Rest Area**	\$
Fish Creek Summit**	\$
Arbon Valley	\$
Tom Cat Summit	\$
Henry's Lake	\$
Botts	\$
China Point	\$

New Site Name	New Site Installation Cost
Gilmore Summit	\$
Willow Creek Summit	\$
Lone Pine	\$
Camp Creek	\$
Osgood/Payne	\$
Lost Trail Pass	\$

**Note that Pocatello (Monte Vista), Malad Summit, Blackfoot Rest Area and Fish Creek Summit are existing sites that are included in this list to be entirely re-built.

Data Integration Costs

Provide any non-recurring design and development costs associated with providing a non-proprietary network design capable of being operated independently from the SI.

Total Non-Recurring Data Integration Cost: \$ _____

Site Equipment Costs

Using the following example table as a template, provide pricing for each instrument / sensor to be installed at the site locations, including the field processing systems. The costing should list the instruments / sensors separately. The price should reflect the installed price, including mounting at the RWIS site, equipment hook-up, calibration and testing.

Example Table

Equipment Description	Contract Years 1-3	Optional Years 4-5	Optional Years 6-7
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$

Maintenance and Operation Costs

Provide a quote for all maintenance and operation (M&O) activities necessary to meet all requirements detailed in section 4.14. Costs should be provided on an annual, per site basis, billed monthly, throughout the project. Maintenance and operations costs should also be estimated for optional project years 4 through 7.

M&O Costs / Site Contract Years 1-3: \$ _____

M&O Costs / Site Contract Years 4-5: \$ _____

M&O Costs / Site Contract Years 6-7: \$ _____

6.6 PROPOSAL EVALUATION

An evaluation committee consisting of ITD staff members and other state agency personnel will review and evaluate qualifying proposals submitted in responses to this RFP. All proposals received will be reviewed by the evaluation committee to ensure that the vendors have met all administrative requirements of the RFP package. Failure to meet these requirements will be cause for rejection of proposal.

The business/technical proposal shall be evaluated first as “pass” or “fail,” based on the mandatory submission requirements, and will later be scored based on the evaluation criteria outlined in the RFP. Note that ITD will rate responses based upon the degree of innovation shown in proposed solutions that effectively balance initial costs, technical risk, and life-cycle costs.

The cost proposal shall be evaluated following the acceptance and scoring of the business/ technical section.

Evaluation Criteria: Vendor responses to each of the items in Sections 4 and 5, Requirements and Specifications, and, System Integrator Specifications, are mandatory and will be evaluated. Points will be assigned to vendor responses, based upon the following schedule:

Area of Consideration	Maximum Points
Innovative Responses to Sections 4.1 through 4.15	3500
Project Management Plan (Section 4.16)	2000
Qualifications (Section 5.2)	2000
Cost Proposal	2500

6.7 METHOD OF AWARD

Proposal ranking will be determined using a point award method. The bidder having the highest point score is the apparent successful bidder. Award will be made to the most responsible and responsive bidder having the lowest cost.

7.0 ATTACHMENTS

Attachments A through F are provided in this section. Respondents are encouraged to read all attachments thoroughly.

ATTACHMENT A – NEW BUILD OUT SITE LIST

District	Location	Highway	MP*	Direction	Install Year	Latitude	Longitude	Elevation (ft)	Data Required			
									Std Atm.**	Pavement	Image(s)	Other
1	Seasons	SH-41	16.0	Southbound	2006	47.92613	-116.85016	2625	X	Surface temp, condition	One direction	Precip rate & type
	Five Mile Hill	US-95	526.0	Northbound	2006	48.93215	-116.33071	2838	X	Surface temp	Multiple directions	Precip rate & type
	Dickensheet	SH-57	22.5	Northbound	2006	48.45186	-116.90789	2546	X	Surface temp, subsurface temp	One direction	Snow Depth
	Havard Hill	SH-6	23.2	Eastbound	2007	47.06665	-116.66693	3606	X	Surface temp	One direction	Snow Depth
2	Top of Whitebird Hill	US-95	231.0	Northbound	2006	45.84103	-116.23632	4210	X	Surface temp, condition, freeze point	Two directions	Precip rate & type
	Deary	SH-3	26.5	Northbound	2006	46.79882	-116.55199	2897	X	None	Multiple directions	None
	Cottonwood Creek	US-12	19.1	Eastbound	2006	46.49967	-116.71362	846	X	Surface temp, condition, freeze point	Multiple directions	
	Concrete Section	US-95	250.5	Southbound	2006	45.99679	-116.32507	3370	X	Surface temp, condition, freeze point	Multiple directions	Precip rate & type
	Saddle Camp	US-12	138.8	Westbound	2007	46.44485	-115.08422	2740	X	Surface temp, condition, freeze point	None	Precip rate & type
	Shoshone County Line	SH-3	51.0	Northbound	2007	46.97356	-116.27587	2927	No	Surface temp	Two directions	Precip rate & type
	Kamiah	US-12	64.7	Westbound	2007	46.24678	-116.04193	1214	X (no wind)	Surface temp, condition, freeze point	One direction	Visibility
	Elk City	SH-14	49.5	Eastbound	2007	45.82772	-115.44039	3967	X	None	One direction	Precip rate & type, snow depth
	Top of Greer Grade	SH-11	8.2	Northbound	2007	46.38231	-116.12761	3091	X	Surface temp	One direction	None
	Frei Hill	US-95	259.2	Southbound	2007	46.11296	-116.35420	3721	X	Surface temp, condition, freeze point	Multiple directions	Precip rate

*Milepost information approximate

** Std Adm. = Air Temp., R/H, Precipitation Y/N, WSWD, Barometric Pressure

District	Location	Highway	MP*	Direction	Install Year	Latitude	Longitude	Elevation (ft)	Data Required			
									Std Atm.**	Pavement	Image(s)	Other
3	Fort Hall Hill	US-95	143.0	Northbound	2006	44.82611	-116.39712	3670	X	Surface temp, condition, freeze point	Two directions	Precip rate & type
	Horseshoe Bend Hill	SH-55	57.0	Southbound	2006	43.83625	-116.24556	4253	X	Surface temp, condition, freeze point	None	None
	Midvale Hill	US-95	101.0	Northbound	2006	44.44491	-116.80053	3160	X	Surface temp, condition, freeze point	None	Precip rate & type
	Highland Valley Summit	SH-21	14.3	Southbound	2006	43.57011	-116.03198	3775	X	Surface temp, condition, freeze point	One direction	None
	Hammett Hill	I-84	102.9	Eastbound	2007	43.04810	115.57996	3191	X	Surface temp, condition, freeze point	Two directions	None
	Little Donner	SH-55	120.3	Southbound	2007	44.58017	116.03955	5180	X	Surface temp, condition, freeze point	Two directions	Precip rate, snow depth
	District 3 Boundary	US-95	171.2	Southbound	2007	45.11644	-116.30370	3817	X	Surface temp, condition, freeze point	Two directions	Precip rate, snow depth
	Top of Summit, ION	US-95	7.5	Southbound	2007	43.33857	-116.95626	4420	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Goose Creek Grade	SH-55	147.3	Southbound	2007	44.92948	116.15515	5371	X	Surface temp, condition, freeze point	Two directions	Precip rate, snow depth
	I-84/US-95 Interchange	I-84	2.1	Eastbound	2007	43.97872	-116.92339	2250	X	Surface temp, condition, freeze point	Multiple directions	Precip rate

*Milepost information approximate

** Std Adm. = Air Temp., R/H, Precipitation Y/N, WSWD, Barometric Pressure

District	Location	Highway	MP*	Direction	Install Year	Latitude	Longitude	Elevation (ft)	Data Required			
									Std Atm.**	Pavement	Image(s)	Other
4	Juniper Interchange	I-84	263.0	Eastbound	2006	42.14474	-112.98055	5203	X	Surface temp, condition, freeze point	Two directions	Precip rate & type, visibility
	Heyburn Interchange	I-84	211.0	Eastbound	2006	42.56833	-113.73033	4161	None	Surface temp, condition, freeze point	Multiple directions	None
	Pine Turnoff	US-20	127.0	Westbound	2006	43.31365	-115.26654	5469	X	Surface temp, condition, freeze point	Two directions	None
	Smiley Creek Airport	SH-75	165.0	Northbound	2006	43.90958	-114.79518	7191	X	None	Two directions	Density-altitude
	Timmerman Hill	SH-75	102.0	Southbound	2006	43.32534	-114.28078	4926	X	Surface temp, condition, freeze point	Multiple directions	Precip rate, visibility
	Kinsey Butte	SH-75	85.0	Southbound	2007	43.09615	-114.37156	4594	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Gwynn Ranch Hill	SH-46	26.0	Southbound	2007	43.12421	-114.66058	4819	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Rogerson	US-93	17.0	Southbound	2007	42.21482	-114.59476	4913	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Conner Summit	SH-77	11.5	Southbound	2007	42.33099	-113.49971	5729	X	None	Two directions	Precip rate
5	Idahome Interchange	I-84	237.0	Eastbound	2007	42.41330	-113.31790	4436	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Pocatello (Monte Vista)	I-15	68.0	Southbound	2006	42.85082	-112.41500	4605	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Malad Summit	I-15	24.0	Southbound	2006	42.34321	-112.22679	5574	X	Surface temp, condition, freeze point	One direction	Precip rate
	Blackfoot Rest Area	I-15	101.0	Median	2006	43.30153	-112.27203	4578	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Fish Creek Summit	US-30	376.0	Westbound	2006	42.62651	-111.91949	6061	X	Surface temp, condition, freeze point	Two directions	Precip rate
	Arbon Valley	I-86	50.5	Eastbound	2007	42.87937	-112.66341	4396	X	Surface temp, condition, freeze point	Two directions	Precip rate & type

*Milepost information approximate

** Std Adm. = Air Temp., R/H, Precipitation Y/N, WSWD, Barometric Pressure

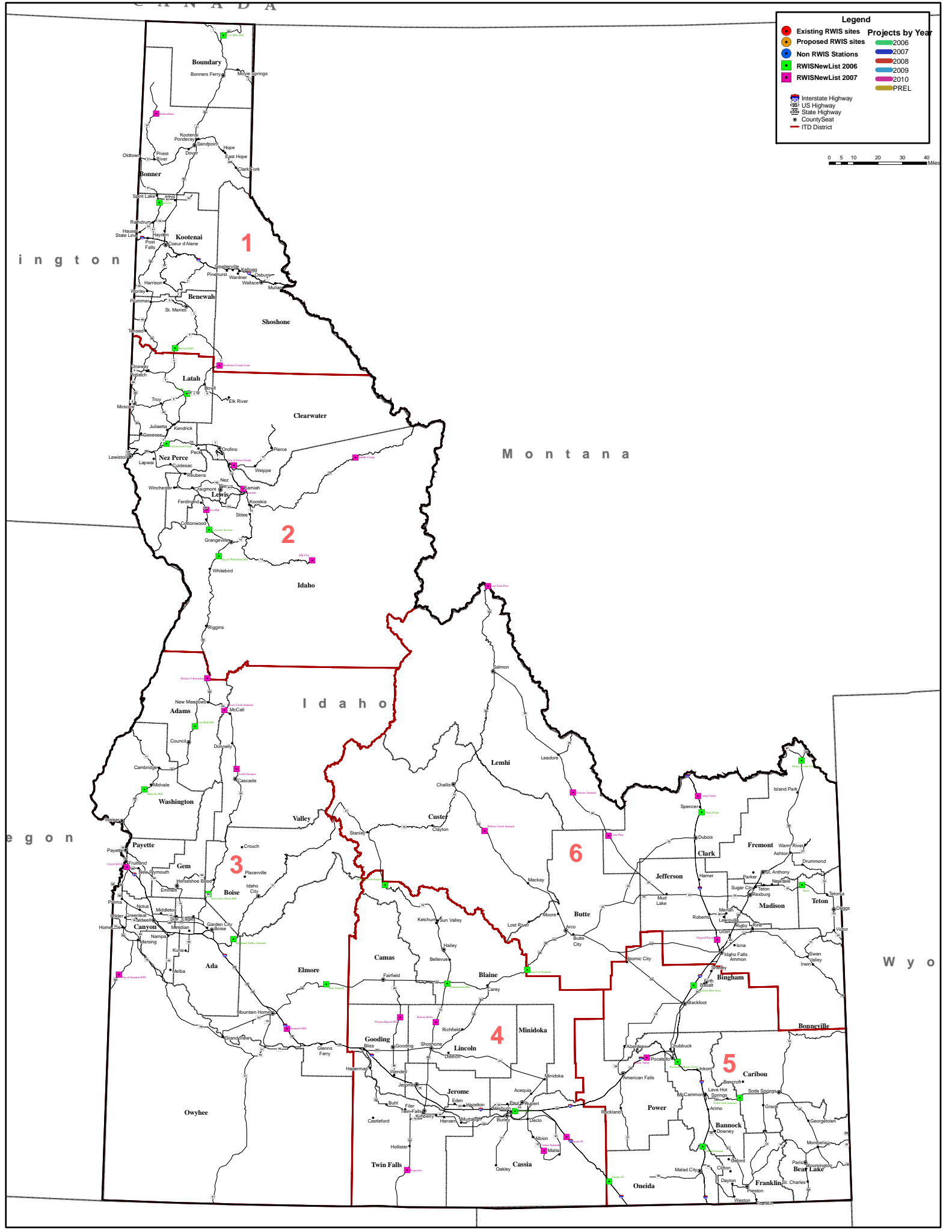
District	Location	Highway	MP*	Direction	Install Year	Latitude	Longitude	Elevation (ft)	Data Required			
									Std Atm.**	Pavement	Image(s)	Other
6	Tom Cat Summit	US-20	223.7	Westbound	2006	43.40557	-113.62707	5763	X	None	Two directions	None
	Henry's Lake	US-20	401.0	Westbound	2006	44.61831	-111.33548	6616	X	None	One direction	Visibility
	Botts	SH-33	120.3	Eastbound	2006	43.87870	-111.36294	6000	X	None	One direction	None
	China Point	I-15	178.5	Northbound	2006	44.32860	-112.17498	5839	X	Surface temp, condition, freeze point	One direction	Precip rate & type, visibility
	Gilmore Summit	SH-28	73.5	Southbound	2007	44.45622	-113.24143	6985	X	None	One direction	Precip rate & type
	Willow Creek Summit	US-93	138.7	Northbound	2007	44.23082	-113.97541	7195	X	None	Two directions	Precip rate & type
	Lone Pine	SH-28	49.2	Northbound	2007	44.20014	-112.95079	6266	X	None	Two directions	Precip rate & type
	Camp Creek	I-15	185.3	Northbound	2007	44.42526	-112.20360	6261	X	None	Multiple directions	None
	Osgood/Payne	I-15	123.7	Overpass	2007	43.56979	-112.07276	4830	None	None	Two directions	None
	Lost Trail Pass	US-93	350.8	Northbound	2007	45.68672	-113.94600	6987	X	Surface temp, condition, freeze point	One direction	Precip rate & type

*Milepost information approximate

** Std Adm. = Air Temp., R/H, Precipitation Y/N, WSWD, Barometric Pressure

ATTACHMENT B – NEW BUILD OUT SITE MAP





ington

Montana

Idaho

egon

Wy o

ATTACHMENT C – CAMERA SPECIFICATION

ITD RWIS Video Imagery Equipment Specifications

Description. Cameras shall be dual-mode digital cameras that provide day/night modes that are optimized for the lighting conditions at each site. Cameras will be specified as either fixed or pan-tilt-zoom (PTZ), depending upon the number of images required for a given location. The cameras shall be environmentally protected to allow for operation in all weather.

Environmental. The camera housing shall allow for operation in temperatures from -35°C to $+55^{\circ}\text{C}$ (-31°F to $+131^{\circ}\text{F}$). It shall operate in external 0% to 100% RH and internal 20% to 80% RH. The housing shall keep the camera and lens free of rain and snow or other roadway contaminants.

Resolution and Image Quality. The camera shall provide for images with a resolution of minimum of 640 pixels by 480 pixels. The camera shall be able to capture images at a variable rate up to 15 frames per second.

The camera shall be dual-mode, allowing for images in full daylight, reduced light and night time.

The Fixed-view camera shall have a fixed-focus, wide-angle lens with the capability to accept other focal length lenses. The system shall be able to accommodate up to four fixed-view cameras per site.

The PTZ camera lens shall have a focal length of a minimum less than 5mm to a maximum greater than 80 mm, and an optical zoom of at least 20x. In addition, a digital range shall provide 10x zoom, for a minimum total optical/digital zoom of 200x. The wide-angle perspective should have a minimum of 50° view. The lens shall allow for automatic and manual focus.

Software should allow for addition and editing of text stamp overlays on images. These text overlays will include:

- Camera location. (named roadway or intersection of two named roadways)
- Elevation.
- Time and date picture was taken.
- Viewing direction. (e.g. "Looking North-east").

Image Processing. The field system shall be able to digitize the images from up to four cameras simultaneously. The RPU shall compress and store images in the Joint Photographic Experts Group (JPEG) Standard Format.

Control of PTZ Cameras. The camera shall allow for control for pan/tilt/zoom/focus functions via RS-422 or RS-232 serial communications through a terminal at the site or network connection to a remote site. The following are minimum control requirements:

- Pan: 360° pan at a variable rate from $<1.0^{\circ}/\text{sec}$ to $>200^{\circ}/\text{sec}$.
- Tilt: Movement from 0° to 90° down with variable tilt rates of $<1^{\circ}/\text{sec}$ to $>50^{\circ}/\text{sec}$
- Zoom: Variable speed zoom from $<0.5\text{x}/\text{sec}$ to $>10\text{x}/\text{sec}$

- **Focus:** switch between manual and automatic focus, and manually focus lens from remote location.

The PTZ camera shall also provide a minimum of 64 preshot positions, with each position including pan, tilt, zoom, focus, and iris. The preshot accuracy shall be less than one-tenth of a degree ($<1/10^\circ$). A twenty-four (24) character label associated with each preshot position must be programmable, with the ability to place the preshot title at any location on the image. The user shall be able to select any preshot position and the camera will automatically move to it.

Image Storage. Image files shall comply with RWIS Data Integration specifications. As new image files are written, older files shall be deleted.

Supported protocols. The camera shall allow for data transfer via the following protocols: TCP/IP, HTTP, FTP, SMTP, PPP. The camera shall provide for online/offline commands to establish/terminate PPP dial up connections

Connection. The camera shall provide for Ethernet 10baseT, ISDN SO RJ45(twisted pair) network attachment, and/or RS-232 supporting V90 dial up modem, depending upon the communication availability at each site. In instances where no landline communications are available, the Contractor shall propose an appropriate, cost-effective wireless communication technology.

Power Supply. The camera shall operate continuously using 115 VAC 50/60 Hz or 12V DC, depending upon the power availability at each site.

ATTACHMENT D – DATA INTEGRATION SPECIFICATION

Idaho Transportation Department RWIDS Data Interface Requirements

Revised: February 24, 2006

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Introduction

This document provides detailed interface requirements between the ITD RWIS Network, the vendor's hosted polling, processing and data storage environment, and, the ITD Road Weather Integrated Data System (RWIDS). This document should be used to develop the necessary data integration procedures needed to provide timely information from individual RWIS sites to the RWIDS database.

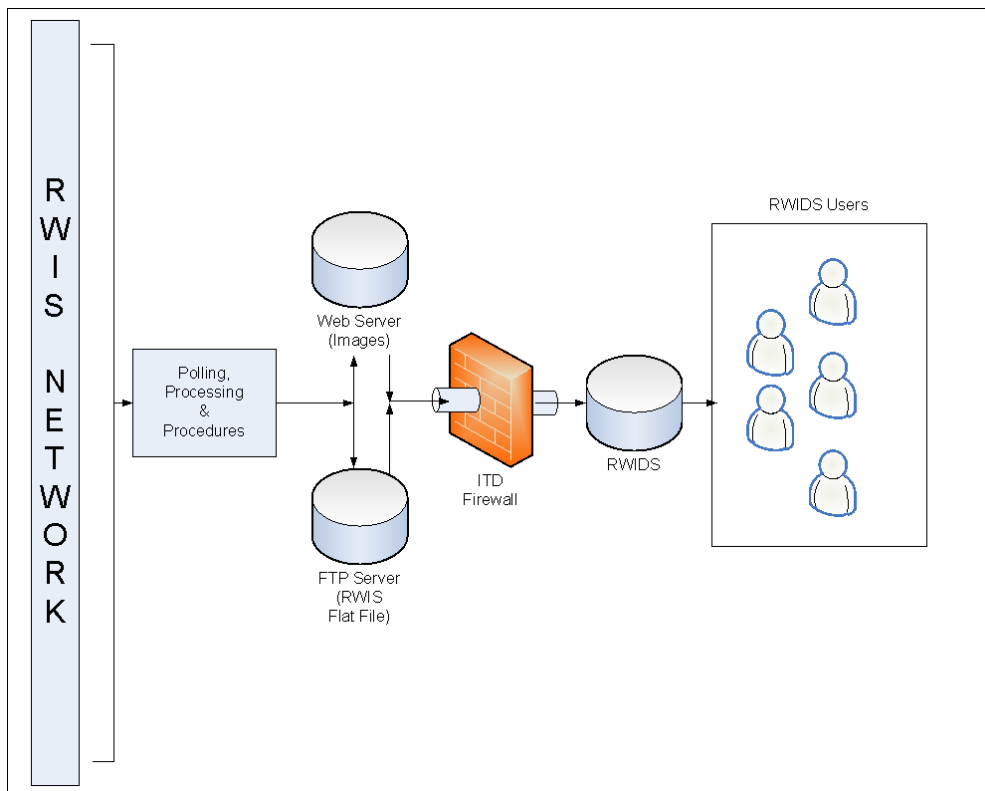
System Requirements

Overall system requirements are:

- Three flat files of data meeting the requirements of this specification, encompassing weather, pavement and sub-surface condition information.
- A vendor supplied hosted environment providing the following capabilities:
 - Polling software for obtaining data from each RWIS site.
 - Middleware to create the RWIDS flat files per this specification.
 - File transfer protocol (ftp) server.
 - Connectivity and log-on accessibility to the ftp server, with the ITD RWIDS Data Ingest application.
 - Web server to house camera images.
- Regularly scheduled process to complete RWIS site polling and create the flat files and image files for ITD.

High Level System Overview

The following diagram provides a high level view of the data interface design.



Data Standards

The data file must use the following standards:

1. The data files created by the vendor must comply with the structure provided in the following sections.
2. Each flat file must be named according to the following format:

Information	File Naming Convention
Weather	IdahoWeatherData.txt
Pavement Condition	IdahoPavementData.txt
Sub-Surface Condition	IdahoSubSurfaceData.txt

3. Upon creation, each file must be placed on a ftp server, within a folder structure accessible by RWIDS. The location must remain constant.
4. Each new file must replace the existing file.
5. Each polled RWIS site will comprise a single record.
6. Each record shall be contained in a single line, followed by a carriage return.
7. All data elements that are reported from the RWIS network should be included for each record. Data elements, which will never be reported from the RWIS network, may be omitted from the file.
8. Error or missing values shall comply with NTCIP standards for each parameter (e.g. for Air Temperature, the standard error indicator is 1001), as indicated in the following tables. If there is no data or error information available for any reason, the field shall be blank, but still be delimited by commas.

Weather Information – IdahoWeather.txt

The following table represents the weather related data from the each RWIS site.

Attribute Name	Data Type (Size)	Associated Standard	Description
intStationID(FK)	smallint(default)		Reference to associated Station. Reference will be to one intStationID
dtUpdate	visiblestring	Global Time Parameter (NTICP 1201 v02.16)	The time the event log was last updated for this incident. The current UTC (aka Zulu or GMT) time in seconds since the epoch of 00:00:00 (midnight) January 1, 1970 UTC.
intWeatherID (FK)	tinyint(default)		Reference to the associated Weather Conditions. Reference will be to one intWeatherID

Attribute Name	Data Type (Size)	Associated Standard	Description
intAirTemp	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – temperature – data [2], TemperatureData – ess-temperature-sensor-table [1] OPTIONAL, EssTemperatureSensorEntry – ess-air-temperature [2], INTEGER (-1000 .. 1001)	The dry-bulb temperature in tenths of degrees Celsius. The value 1001 shall indicate an error condition or missing value. (1/10 degrees C)
intAirTempMax	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – temperature – data [2], TemperatureData – ess-max-temperature [4], INTEGER(-1000 ..1001) OPTIONAL	The maximum air temperature tents of degrees Celsius recorded during the 24 hours period preceding the observation. The value 1001 shall indicate an error condition or missing value. (1/10 degrees C)
intAirTempMin	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – temperature – data [2], TemperatureData – ess-min-temp - [5] INTEGER(-1000.. 1001), OPTIONAL	The minimum air temperature tents of degrees Celsius recorded during the 24 hours period preceding the observation. The value 1001 shall indicate an error condition or missing value. (1/10 degrees C)
intDewPoint	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – temperature – data [2], TemperatureData – ess-dewpoint-temp - [3] INTEGER(-1000.. 1001), OTPIONAL	The dewpoint temperature in tents of degrees Celsius. The value of 1001 shall indicate an error condition or missing value. (1/10 degrees C)
intRelHumidity	tinyint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData – ess-relative-humidity - [0] INTEGER (0 .. 101) OPTIONAL	The relative humidity in percent. The value of 101 shall indicate an error condition or missing value. (%)
intWindSpeedAvg	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – wind-data [1], WindData - ess-avg-wind-speed - [1] INTEGER (0 .. 65535) OPTIONAL	A two minute average of the wind speed in tenths of meters per second. A value of 6555 shall indicate an error condition or missing value. (1/10 meters/sec)

Attribute Name	Data Type (Size)	Associated Standard	Description
intWindSpeedGust	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – wind-data [1], WindData – ess-max-wind-gust-speed [5] INTEGER (0.. 65535) OPTIONAL	The maximum wind gust recorded during the 10 minutes preceding the observation. The value 65535 shall indicate an error condition or missing value. (1/10 meters/sec)
intWindDirAvg	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – wind-data [1], WindData – ess-average-wind-direction [0] INTEGER (0..361) OPTIONAL	A two minute average of wind from which the wind is blowing measured clockwise in degrees from true North. A value of 361 shall indicate an error condition or missing value. (degrees from north)
sPrecipIntensity	varchar(15)		Derived from precipitation rate – described as light, moderate, heavy.
sPrecipType	varchar(15)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData – precipitation-situation [8]	Describes the precipitation type and intensity.
intPrecipRate	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-rate [6] INTEGER (0 .. 65535) OPTIONAL	The rainfall rate or liquid equivalent precipitation rate for frozen precipitation in tents of grams per square meter per second (for rain, this is approximately to .36 mm/hr). A value of 65535 shall indicate an error condition or missing value.
intPrecipAccum	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-snowfall-accumulation-rate [7] INTEGER (0 .. 65535) OPTIONAL	The snowfall accumulation rate in 10 ⁻⁷ meters per second (this is equivalent to 0.36 mm/hr). A value of 65535 shall indicate an error condition or missing value.
int1HrPrecipAccum	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-one-hour [12] INTEGER (0 .. 65535) OPTIONAL	The total water equivalent precipitation over the hour preceding the observation in tents of kilograms per square meter (for rain, this is approximately tenths of millimeters). A value of 65535 shall indicate an error condition or missing value.
int3HrPrecipAccum	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-three-hour	The total water equivalent precipitation over the three hours preceding the observation in tents of kilograms per square meter (for rain, this is approximately tenths of millimeters). A

Attribute Name	Data Type (Size)	Associated Standard	Description
		[13] INTEGER (0 .. 65535) OPTIONAL	value of 65535 shall indicate an error condition or missing value.
int6HrPrecipAccum	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-six-hour [14] INTEGER (0 .. 65535) OPTIONAL	The total water equivalent precipitation over the six hours preceding the observation in tents of kilograms per square meter (for rain, this is approximately tenths of millimeters). A value of 65535 shall indicate an error condition or missing value.
int12HrPrecipAccum	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-twelve-hour [15] INTEGER (0 .. 65535) OPTIONAL	The total water equivalent precipitation over the 12 hours preceding the observation in tents of kilograms per square meter (for rain, this is approximately tenths of millimeters). A value of 65535 shall indicate an error condition or missing value.
int24HrPrecipAccum	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-24-hour [16] INTEGER (0 .. 65535) OPTIONAL	The total water equivalent precipitation over the twenty-four hours preceding the observation in tents of kilograms per square meter (for rain, this is approximately tenths of millimeters). A value of 65535 shall indicate an error condition or missing value.
dtLastPrecipStart	datetime(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-start-time [10] UtcTimeDate OPTIONAL	mm/dd/yy hh:mm:ss am/pm (12 hour GMT)
dtLastPrecipEnd	datetime(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – humidity-&-precipitation-data [3], Humidity&PrecipitationData ess-precipitation-end-time [11] UtcTimeDate OPTIONAL	mm/dd/yy hh:mm:ss am/pm (12 hour GMT)
intVisibility	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – visibility-data [5], VisibilityData - ess-visibility - [0] INTEGER (0..1000001) OPTIONAL	Surface visibility measured in one tenth of a meter. The value 1000001 shall indicate an error condition or missing value.
intVisibilityCode	Integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1],	Describes the travel environment in terms of visibility. If one exists, the

Attribute Name	Data Type (Size)	Associated Standard	Description
		StationObservations - visibility-data [5], VisibilityData - ess-visibility-situation - [1] ENUMERATED OPTIONAL	corresponding BUFR value is indicated for staffed (BUFRs) and automated (BUFRa) stations.
intPressure	integer(default)	EssReportMessage - ess-reports [1], EssReports - station-observations [1], StationObservations - ess-atmospheric-pressure - [9] INTEGER (0 .. 65535) OPTIONAL	The force per unit area exerted by the atmosphere in 1/10ths of millibars, a.k.a. tenths of hectoPascals. A value of 65535 shall indicate an error condition or missing value.
intPressureStatus	Integer(default)		Indication of pressure rising, falling, or steady.
int10MinSolar	integer(default)		
int24HrSolar	integer(default)		
int24HrSun	integer(default)	EssReportMessage - ess-reports [1], EssReports - station-observations [1], StationObservations - radiation-data [4] - RadiationData - ess-total-sun [1] INTEGER (0 .. 1441) OPTIONAL	The total amount of sunshine in minutes over the 24 hour period preceding the observation. A value of 1441 shall indicate a missing value.
intWetBulbTemp	smallint(default)	EssReportMessage - ess-reports [1], EssReports - station-observations [1], StationObservations - temperature - data [2], TemperatureData - ess-wetbulb-temperature - [2] INTEGER(-1000.. 1001), OPTIONAL	Wet bulb temperature in tenths of degrees Celsius. The value 1001 shall indicate an error condition or missing value. (1/10 degree C)
intQualityFlag	integer(default)		Code sent by various data sources on the confidence level of data.
intDataPriority	Integer(default)		

Pavement Condition Information – IdahoPavementData.txt

The following table represents the pavement condition related data from the each RWIS site.

Attribute Name	Data Type (Size)	Associated Standard	Description
intStationID(FK)	smallint(default)		Reference to associated station Reference will be to one or more intStationID
sSensorDesc	varchar(100)		Description of sensor location.
intSurfaceSensorID	tinyint(default)		Number acting as a identifier for each RWIS Surface sensor
dtUpdate	visiblestring	Global Time Parameter (NTICP 1201 v02.16)	The time the event log was last updated for this incident. The current UTC (aka Zulu or GMT) time in seconds since the epoch of 00:00:00 (midnight) January 1, 1970 UTC.
intSurfaceStatus (FK)	tinyint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-pavement-sensor-table [1], EssPavementSensorEntry - ess-surface-status [6] ENUMERATED OPTIONAL	A value indicating pavement surface status.
intSurfaceTemp	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-pavement-sensor-table [1], EssPavementSensorEntry - ess-surface-temperature [7], INTEGER (-1000..1001) OPTIONAL	The current surface temperature in tenths of degrees Celsius. The value 1001 shall indicate an error condition or missing value. (1/10 degree C)
intFreezePoint	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-pavement-sensor-table [1], EssPavementSensorEntry - ess-surface-freezepoint [12], INTEGER (-1000 .. 1001) OPTIONAL	The temperature in tenths of degrees Celsius at which the existing solution on the roadway will freeze. The value 1001 shall indicate an error condition or missing value. (1/10 degree C)
intChemPct	tinyint(default)		Percent
intWaterDepth	Integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-pavement-sensor-table [1], EssPavementSensorEntry - ess-surface-water-depth [9],	The current depth of water on the surface of the road measured in millimeters. The value 255 shall indicate an error condition or missing value. (mm)

Attribute Name	Data Type (Size)	Associated Standard	Description
		INTEGER (0 .. 255) OPTIONAL	
intIcePct	tinyint(default)		Percent
intSalinity	integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-pavement-sensor-table [1], EssPavementSensorEntry - ess-surface-salinity [10], INTEGER (0 .. 65535) OPTIONAL	The pavement salinity in parts per one hundred thousand. The value 65535 shall indicate an error condition or missing value. (Parts/100,000)
intConductivity	Integer(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-pavement-sensor-table [1], EssPavementSensorEntry - ess-surface-conductivity [11], INTEGER (0 .. 65535) OPTIONAL	Indicates the conductance of the ice/liquid mixture on the pavement as detected by the sensor, in mhos, which is the inverse of ohms. The value 65535 shall indicate an error condition or missing value. (mhos)

Sub-Surface Information – IdahoSubSurfaceData.txt

The following table represents the sub-surface condition related data from the each RWIS site.

Attribute Name	Data Type (Size)	Associated Standard	Description
intStationID(FK)	smallint(default)		Reference to associated station. Reference will be to one or more intStationID
sSensorDesc	varchar(100)		Description of subsensor location.
intSubSensorID	tinyint(default)		Number acting as a identifier for each RWIS Surface sensor
dtUpdate	datetime	EssLocationReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – measurement-time [0], UtcTimeDate – utc-time [0] VisibleString (SIZE(9)) – utc-date [0] VisibleString (SIZE(8))	The time the event log was last updated for this incident. The current UTC (aka Zulu or GMT) time in seconds since the epoch of 00:00:00 (midnight) January 1, 1970 UTC.
intSubSurfTemp	smallint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-sub-surface-sensor-table [3], EssSubSurfaceSensorEntry ess-sub-surface-temperature [4], INTEGER (-1000 .. 1001) OPTIONAL	The current sub-surface temperature in tenths of degrees Celsius. The value of 1001 shall indicate an error or missing value. (1/10 Celsius)
intSubSurfMoisture	tinyint(default)	EssReportMessage – ess-reports [1], EssReports – station-observations [1], StationObservations – pavement-data [6] – PavementData – ess-sub-surface-sensor-table [3], EssSubSurfaceSensorEntry ess-sub-surface-moisture [5], INTEGER (0 .. 101) OPTIONAL	The sub-surface moisture expressed as a percentage (e.g., 0 indicates dry, 100 indicates saturated). The value of 101 indicates an error condition or missing value. (percent)
intDeltaT	integer(default)		Picoseconds

Image File Standards

Images from the RWIS network shall comply with the following specifications:

1. The image files from the RWIS stations shall reside on a publicly available Web server.
2. The image file shall be .jpg format, 640x480 pixels in size, compression level to result in approximately 30~50 KB file size (each).
3. The image file should use the following naming protocol:
<http://rwiscompany.com/idaho/images/stationname.jpg>

Station name represents the unique RWIS long name based upon city or location. For instance, an image from Galena summit could be located at <http://rwiscompany.com/idaho/images/galena.jpg>.

4. The image file name shall not change.
5. The most recent file replaces the older file.
6. If there is no new file within one hour, the most recent file should be blanked out and replaced by a message stating "The image is currently unavailable."
7. The image file should have text overlays across the top and bottom of the image:
 - Time and date picture was taken.
 - Camera location. (named roadway or intersection of two named roadways).
 - Elevation
 - Viewing direction. (e.g. "Looking North-east").

Note text overlay requirements in the ITD RWIS Video Imagery Equipment Specification.

Contact Information

Please direct questions related to the information contained in this document to:

ATTACHMENT E – ITD FIRST LINE MAINTENANCE FUNCTIONS

RWIS Preventive Maintenance Checklist

DATE _____

TECHNICIAN _____

LOCATION _____

- ____ Check the stability of the RPU cabinet.
- ____ Replace the padlock if rusty or hard to open.
- ____ Clean the dirt, trash, and insect nest from inside the cabinet. **Remember Safety First!**
- ____ Use duct seal, steel wool & / or caulking to seal up any holes in the cabinet.
- ____ Check all RPU and panel hardware tighten or replace.
- ____ On the RPU check the power supply voltages at the indicated test points. The voltage requirements for + or - 12 volt, within ± 0.50 volts of value marked at test point. The voltage requirements for + or - 5 volt, within ± 0.25 volts of value marked at test point.
- ____ Use an ohm meter to check for leakage in the Type V cables. Shield to each conductor at the RPU end.
- ____ Clean the grid or lens on the PRECIP sensor and check operation.
- ____ Wash the screen around the RH sensor and clean the shield.
- ____ Perform the shock test on the RH sensor. Wrap a warm wet towel around the stem for 30 minutes. The sensor should read 93 to 95 percent. **HINT:** Covering sensor with a plastic bag when windy during this tests helps.
- ____ Check the calibration of the Air Temp sensor with your thermometer and compare with the reading transmitted by the RPU.
- ____ Check the bearings yearly, replace every 3 years in the R.M. Young wind sensor.
- ____ Check the wind direction at all four compass points and compare with the reading transmitted by the RPU.
- ____ Check the operation of the wind speed sensor and compare the reading with the data transmitted by the RPU.
- ____ Check the operation of the modem and power interrupter.
- ____ Check telephone line ring voltage and run modem speed check and note in log.(Only do this once for a bench mark or when needed.)
- ____ Make a voice call on the telephone line and check for noise on the line.
- ____ Check the condition of each splice can or box.
- ____ Check for visible moisture in any of the splices.
- ____ Check condition of kerfs and surface sensor mounting.
- ____ Check and adjust if needed the Dry voltages for each sensor and compare with the data transmitted by the RPU. This is only for the old SSI "E" Type sensors.
- ____ Update any hardware changes to the latest version.
- ____ What was changed added or deleted? _____

ADDITIONAL CHECKS FOR SITES WITH:

SOLAR POWERED SITES:

- ___ Check and clean battery connections.
- ___ Check battery voltage and load test batteries.
- ___ Check all cables for damage and/or corroded connections at solar panels and charge controller.
- ___ Clean solar panels, check for physical damage.
- ___ Check charge voltage and current from panels.
- ___ Check the output voltage and current from charge controller.

SSI OUT POST SITES:

- ___ Check the physical condition of the radio antenna and coax line.
- ___ Check the aim of the beam radio antenna.
- ___ Check the forward and reflected power of the radio.
- ___ Check the radio power supply for proper voltage.

CELLULAR PHONE CONNECTED SITES:

- ___ Check the physical condition of cellular antenna and coax line.
- ___ Check the aim of the yagi antenna if applicable.
- ___ Check the forward and reflected power.
- ___ Check the power supply for proper voltage and battery capacity.
- ___ Make a voice call on the cell phone and check for noise and note signal strength.

REMEMBER TO PERFORM A FORCE UPDATE THE SITE AND VERIFY THAT ALL SENSORS ARE RESPONDING AND SITES WITH CAMERAS UPDATED THE PICTURE!

NOTES: _____

ATTACHMENT F – SIGNATURE PAGE

SIGNATURE PAGE

THIS SHEET MUST BE COMPLETED, SIGNED AND RETURNED WITH YOUR BID

THE UNDERSIGNED HEREBY OFFERS TO SELL TO IDAHO TRANSPORTATION DEPARTMENT THE SPECIFIED PROPERTY AND/OR SERVICES, IF THIS BID IS ACCEPTED WITHIN A REASONABLE TIME FROM DATE OF CLOSING, AT THE PRICE SHOWN IN OUR BID AND UNDER ALL THE TERMS AND CONDITIONS CONTAINED IN, OR INCORPORATED BY REFERENCE, INTO THE IDAHO TRANSPORTATION DEPARTMENT BID SOLICITATION.

SUBMISSION OF A BID TO IDAHO TRANSPORTATION DEPARTMENT SHALL BE DEEMED AN OFFER TO SELL THE SPECIFIED PROPERTY AND/OR SERVICES AT THE PRICE SHOWN IN THE BID AND UNDER THE STATE OF IDAHO'S TERMS AND CONDITIONS, THAT CAN BE FOUND AT <http://adm.idaho.gov/purchasing>.

AS THE UNDERSIGNED, I ALSO CERTIFY I AM AUTHORIZED TO SIGN THIS BID FOR THE BIDDER AND THE BID SOLICITATION IS MADE WITHOUT CONNECTION TO ANY PERSON, FIRM, OR CORPORATION MAKING A BID FOR THE SAME GOODS AND/OR SERVICES AND IS IN ALL RESPECTS FAIR AND WITHOUT COLLUSION OR FRAUD.

NO LIABILITY WILL BE ASSUMED BY IDAHO TRANSPORTATION DEPARTMENT FOR A BIDDER'S FAILURE TO OBTAIN THE TERMS AND CONDITIONS IN A TIMELY MANNER FOR USE IN THE BIDDER'S RESPONSE TO THIS BID SOLICITATION OR ANY OTHER FAILURE BY THE BIDDER TO CONSIDER THE TERMS AND CONDITIONS IN THE BIDDER'S RESPONSE TO THE BID SOLICITATION.

Please complete the following information:

BIDDER (Company Name)_____

ADDRESS_____

CITY _____ STATE _____ ZIP CODE _____

TOLL-FREE # _____ PHONE # _____

FAX # _____ EMAIL _____

FEDERAL TAX ID / SSN # _____

IDAHO PUBLIC WORKS CONTRACTOR LICENSE # _____

THIS SIGNATURE PAGE MUST BE SIGNED & RETURNED WITH YOUR BID FOR THE BID TO BE CONSIDERED.

Signature

Date

Please type or print name

Title

Bid Title: _____

Requisition # _____